

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

Dareltech, LLC, Inc.,
Patent Owner

Case IPR2019-01575

U.S. Patent No. 9,075,612

**Petition for Inter Partes Review of
U.S. Patent No. 9,075,612**

Table of Contents

I.	INTRODUCTION	1
II.	GROUND FOR STANDING (37 C.F.R. § 42.104(A)).....	1
III.	STATEMENT OF PRECISE RELIEF REQUESTED FOR EACH CLAIM CHALLENGED	1
	A. Claims and Statutory Grounds (37 C.F.R. § 42.104(b))	1
IV.	OVERVIEW OF THE '612 PATENT.....	3
	A. Summary	3
	B. Prosecution History	5
	C. Effective Filing Date	6
	D. Level of Ordinary Skill in the Art.....	8
	E. Claim Construction - “locked state” (claims 1, 10, 14 and 16)	8
	F. The Board Should Institute Review	10
V.	THE PRIOR ART RENDERS THE CLAIMS OBVIOUS	10
	A. The Prior Art	10
	1. <i>Park</i> (Ex. 1028).....	10
	2. <i>Newman</i> (Ex. 1029)	14
	3. <i>Ording</i> (Ex. 1030).....	16
	4. <i>Siwinski</i> (Ex. 1031)	18
	5. <i>Yang</i> (Ex. 1002)	19
	B. Grounds 1A/1B: <i>Park</i> in view of <i>Newman</i> (1A) and <i>Park</i> in view of <i>Newman</i> and <i>Ording</i> (1B) render obvious claims 1-2, 5-6, 9-15, and 18.....	20

1.	Claim 1	20
	[1p] “A portable phone comprising”	20
	[1a] “a display comprising a display screen”	21
	[1b] “one or more processors”	22
	[1c] “a memory comprising program instructions, wherein the program instructions are executed by the one or more processors to implement . . .”	23
	[1d] “a power management module configured to manage power consumption of the display”	24
	[1e] “wherein when the display is not in a sleep mode the power management module directs a display controller to display a set of a plurality of graphical indications in color in a full configuration mode that puts substantially all of the display screen in a powered-on state”	25
	[1f] “wherein when the display is in a sleep mode, the power management module directs the display controller to display a subset of the plurality of graphical indications”	32
	(i) Grounds 1A.....	35
	(ii) Grounds 1B.....	36
	[1g] “the subset comprising an unlock image comprising at least one of, time, date, or an indication of an email, text message, or voice message”	40
	[1h] “wherein the subset of the plurality of graphical indications are displayed in a portion of the display screen”	41
	[1i] “are displayed in black, white or grayscale, instead of displayed in color”	41

- [1j] “a user interface module configured to respond, when the portable phone is in a locked state, to unlock gestures associated with the unlock image”45
- [1k] “wherein a particular unlock gesture of the unlock gestures causes: the phone to transition to an unlocked state, and the display controller to enter the full configuration mode”48
- [1l] “wherein another particular unlock gesture of the unlock gestures causes: the phone to transition to an unlocked state, and the display controller to enter a proportional configuration mode that puts at least a portion of the display screen in a powered-off state and another portion of the display screen in the powered-on state”51
- 2. Claim 2 - “The portable phone of claim 1, wherein when the other portion of the display screen is in the powered-on state, the other portion of the display screen is configured to perform display functions and receive user input”55
- 3. Claim 556
 - [5a] “The portable phone of claim 1, wherein the power management module is further configured to instruct the display controller to function in a full display mode”56
 - [5b] “wherein the full display mode configures substantially all of an available area of the display screen in the powered-on state when the display controller of the portable phone is in the full display mode”56
- 4. Claim 657
 - [6a] “The portable phone of claim 1, wherein the power management module is further configured to manage the display of the portable phone when the display is in a powered-off mode”57
 - [6b] “the power management module configured to direct the display controller to display at least one of a time, date or

	an indication of one or more messages while the display controller is in the powered-off mode”	57
5.	Claim 9	58
	[9a] “The portable phone of claim 1, wherein the display is a touch-sensitive display”	58
	[9b] “and wherein to respond to unlock gestures the user interface module is further configured to: detect a contact with the touch-sensitive display at a first predefined location corresponding to an unlock image”	58
	[9c] “continuously move the unlock image on the touch-sensitive display in accordance with movement of the contact while continuous contact with the display screen is maintained as part of the gestures”	60
	[9d] “wherein the unlock image is a graphical, interactive user-interface object with which a user interacts in order to unlock the portable phone”	60
6.	Claim 10	61
	[10p] “A method comprising”	61
	[10a] “managing a display of a portable phone, wherein managing the display comprises”	62
	[10b] “directing, by a power management module, the display” 62	
	[10c] “wherein when the display is not in a sleep mode, the power management module directs the display to display a set of a plurality of graphical indications in color in a full configuration mode that puts substantially all of the display of the portable phone in a powered-on state”	62
	[10d] “when the display is in a sleep mode, directing the display, by the power management module, to display a subset of the plurality of graphical indications”	63

[10e]	“the subset comprising an unlock image comprising at least one of, time, date, or an indication of an email, text message, or voice message”	63
[10f]	“wherein the subset of the plurality of graphical indications are displayed in a portion of the display”	63
[10g]	“are displayed in black, white or grayscale, instead of displayed in color”	64
[10h]	“responding, by a user interface module when the portable phone is in a locked state, to unlock gestures associated with the unlock image”	64
[10i]	“wherein responding to a particular unlock gesture of the unlock gestures comprises: transitioning the portable phone to an unlocked state, and causing the display to enter the full configuration mode”	64
[10j]	“wherein responding to another particular unlock gesture of the unlock gestures comprises: transitioning the portable phone to an unlocked state, and causing the display to enter a proportional configuration mode that puts at least a portion of the display in a powered-on state and another portion of the display in the powered-off state”	64
7.	Claim 11	65
[11a]	“The method of claim 10, wherein said responding to the other particular unlock gesture further comprises causing the other portion of the display to not perform display functions”	65
[11b]	“and not receive user input”	66
8.	Claim 12 - “The method of claim 11, wherein said responding to the particular unlock gesture further comprises causing the portion of the display to perform display functions and receive user input”	66
9.	Claim 13	66

	[13a] “The method of claim 12, further comprising instructing the display to function in a full configuration mode”	66
	[13b] “wherein the full configuration mode configures substantially all of the display in a powered-on state” ...	66
10.	Claims 14-15 and 18	67
C.	<i>Park</i> in view of <i>Newman</i> and <i>Siwinski</i> (Grounds 2A) and <i>Park</i> in view of <i>Newman</i> , <i>Ording</i> and <i>Siwinski</i> (Grounds 2B) Renders Claims 3-4 and 16-17 Obvious	68
1.	Claim 3 - “The portable phone of claim 2, wherein the powered-on state configures the other portion of the display screen to function in a grayscale color mode”	68
2.	Claim 4	71
	[4a] “The portable phone of claim 3, wherein the powered-off state configures the portion of the of the display screen to not perform display functions”	71
	[4b] “and to not receive user input”	72
3.	Claim 16 - “The portable phone of claim 15, wherein the locked state of the portable phone configures the display to function in a grayscale color mode”	72
4.	Claim 17	73
	[17a] “The portable phone of claim 16, wherein the powered-off state of the proportional configuration mode configures the other portion of the display to not perform display functions”	73
	[17b] “and to not receive user input”	73
D.	<i>Park</i> in view of <i>Newman</i> and <i>Yang</i> (Grounds 3A) and <i>Park</i> in view of <i>Newman</i> , <i>Ording</i> and <i>Yang</i> (Grounds 3B) Render Claims 7-8, and 19 Obvious.....	73
1.	Claim 7	73

[7a]	“The portable phone of claim 1, wherein the power management module is further configured to direct the display controller to transition between modes based on a configurable battery power threshold”	73
[7b]	“wherein the power management module is further configured to: determine that a battery power of the portable phone reaches the configurable battery power threshold”	75
[7c]	“subsequent to said determine, instruct the display controller to change from a full configuration mode to the proportional configuration mode”	76
2.	Claim 8 - “The portable phone of claim 7, wherein the configurable battery power threshold is a configurable setting in a user interface of the portable phone”	76
3.	Claim 19	77
[19a]	“The portable phone of claim 14 wherein the power management module is further configured to direct the display to change between modes based on a configurable battery power threshold”	77
[19b]	“wherein the power management module is further configured to: determine that a battery power of the portable phone has reached the configurable battery power threshold”	77
[19c]	“subsequent to said determination, instruct the display to shift from the full configuration mode to the proportional configuration mode”	77
VI.	Mandatory Notices Under 37 C.F.R. § 42.8	77
A.	Real Party-in-Interest	77
B.	Related Matters.....	77
C.	Lead and Backup Counsel.....	78

D.	Service Information.....	79
----	--------------------------	----

TABLE OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 8,593,427 (“the ’427 patent”)
1002	U.S. Patent Application Publication No. 2014/0189583 (“ <i>Yang</i> ”)
1003	Not Used
1004	Not Used
1005	Not Used
1006	PCT Application No. PCT/CN2012/087795
1007	Not Used
1008	Not Used
1009	Not Used
1010	Declaration of Andrew Wolfe, Ph.D.
1011	U.S. Patent No. 4,972,496 to Sklarew
1012	O’Malley, <i>BellSouth’s communicative Simon is a milestone in the evolution of the PDA</i> , Byte
1013	Ha, <i>Bellsouth IBM Simon</i> , Time Magazine, Oct. 25, 2010
1014	Ha, <i>Palm Pilot 1000</i> , Time Magazine, Oct. 25, 2010
1015	Newton Apple MessagePad Handbook, © 1995
1016	Macworld, September 1993 (cover)
1017	U.S. Patent Pub. No. 2013/0316769 to Kim
1018	U.S. Patent No. 9,360,967 to Hotelling
1019	U.S. Patent No. 8,203,541 to Wolfe

Exhibit	Description
1020	U.S. Patent No. 8,243,045 to Mangione-Smith
1021	U.S. Patent No. 5,825,352 to Bisset
1022	U.S. Patent No. 7,844,915 to Platzer
1023	Linus Write-Top Computer, printout from http://oldcomputers.net/linus.html [last visited 7/11/2019 2:32:15 PM]
1024	U.S. Patent No. 8,593,328 to Yang et al. (“the ’328 patent”)
1025	Not Used
1026	U.S. Patent No. 9,075,612 to Yang et al. (“the ’612 patent”)
1027	Prosecution History of U.S. Patent Application No. 14/257,888
1028	International Publication No. WO 2013/172507 to <i>Park</i> (“ <i>Park</i> ”)
1029	U.S. Patent Application Publication No. 2013/0111378 to Newman et al. (“ <i>Newman</i> ”)
1030	U.S. Patent No. 8,842,074 to Ording et al. (“ <i>Ording</i> ”)
1031	U.S. Patent No. <i>Siwinski</i> , U.S. Patent No. 7,012,588 (“ <i>Siwinski</i> ”)
1032	Not Used
1033	U.S. Provisional Patent Application No. 61/822,267
1034	U.S. Provisional Patent Application No. 61/826,673
1035	Not Used
1036	U.S. Patent No. to 8,804,324 to Bohn et al (<i>Bohn</i>)
1037	Plaintiff/Counterclaim Defendant’s Objections And Responses To Defendant/Counterclaim Plaintiffs’ Requests For Admission (Nos. 1-6)

Exhibit	Description
1038	U.S. Patent Application Publication No. 2012/0297215 (“ <i>Saba</i> ”)

TABLE OF AUTHORITIES

Cases

<i>Brown v. 3M</i> , 265 F.3d 1349 (Fed. Cir. 2001).....	42
<i>Dareltech, LLC v. Samsung Elecs. Co., Ltd., et al.</i> , Case No. 4:18-cv-00702 (E.D.T.X.)	1
<i>DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.</i> , 464 F.3d 1356 (Fed. Cir. 2006).....	44, 70
<i>In re GPAC Inc.</i> , 57 F.3d 1573 (Fed. Cir. 1995)	8
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007)	32, 39, 40
<i>PowerOasis, Inc. v. T-Mobile USA, Inc.</i> , 522 F.3d 1299 (Fed. Cir. 2008)	6
<i>Tronzo v. Biomet, Inc.</i> , 156 F.3d 1154 (Fed. Cir. 1998).....	7

Statutes

35 U.S.C. § 102(a)(1).....	1, 2, 10, 18
35 U.S.C. § 102(a)(2).....	2, 15, 16, 19
35 U.S.C. § 103	2
35 U.S.C. § 119(e)	6
35 U.S.C. § 311	1

Rules

37 C.F.R. § 42.104(A)	1
37 C.F.R. § 42.104(b)	1
37 C.F.R. § 42.8	77

I. INTRODUCTION

Petitioners Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (“Samsung”) request *inter partes* review of claims 1-19 of U.S. Patent No. 9,075,612 (“the ’612 patent”).

II. GROUND FOR STANDING (37 C.F.R. § 42.104(A))

Samsung certifies that the ’612 patent is available for *inter partes* review, and that Samsung is not barred or estopped from requesting *inter partes* review to challenge the claims on the grounds herein. Samsung filed this Petition within one year of service of Patent Owner’s original complaint against Samsung in district court. *See Dareltech, LLC v. Samsung Elecs. Co., Ltd., et al.*, Case No. 4:18-cv-00702 (E.D.T.X.) (Served 10/31/2018).

III. STATEMENT OF PRECISE RELIEF REQUESTED FOR EACH CLAIM CHALLENGED

A. Claims and Statutory Grounds (37 C.F.R. § 42.104(b))

Samsung requests review and cancellation under 35 U.S.C. § 311 of claims 1-19 in view of:

Prior Art
<i>Park</i> , Int’l Patent Pub. WO 2013/172507 (Ex. 1028); publication date November 21, 2013; prior art under AIA 35 U.S.C. § 102(a)(1).

Newman, U.S. Patent Pub. 2013/0111378 (Ex. 1029); filing date October 31, 2011; prior art under AIA 35 U.S.C. § 102(a)(2).

Ording, U.S. Patent 8,842,074 (Ex. 1030); filing date September 5, 2007; prior art under AIA 35 U.S.C. § 102(a)(2).

Siwinski, U.S. Patent No. 7,012,588 (Ex. 1031); filing date June 5, 2001; prior art under AIA 35 U.S.C. § 102(a)(1).

Yang, U.S. Patent Pub. No. 2014/0189583 (Ex. 1002); effective filing date December 28, 2012; prior art under AIA 35 U.S.C. § 102(a)(2).

Grounds of Unpatentability

1A/1B	<i>Park</i> in view of <i>Newman</i> (1A) and <i>Park</i> in view of <i>Newman</i> and <i>Ording</i> (1B) renders obvious claims 1-2, 5-6, 9-15, and 18 under 35 U.S.C. § 103.
2A/2B	<i>Park</i> in view of <i>Newman</i> , and <i>Siwinski</i> (2A) and <i>Park</i> in view of <i>Newman</i> , <i>Ording</i> , and <i>Siwinski</i> (2B) renders obvious claims 3-4, and 16-17 under 35 U.S.C. § 103.
3A/3B	<i>Park</i> in view of <i>Newman</i> , and <i>Yang</i> (3A) and <i>Park</i> in view of <i>Newman</i> , <i>Ording</i> , and <i>Yang</i> (3B) renders obvious claims 7-8, and 19 under 35 U.S.C. § 103.

IV. OVERVIEW OF THE '612 PATENT

A. Summary

The '612 patent is directed to a system for reducing power consumption in battery-powered devices like mobile phones. '612 patent, Abstract. The embodiments of the '612 patent have a touchscreen display (*e.g.*, touch-sensitive display system 112, shown in Fig. 1). '612 patent, 11:35-36. The touchscreen display may function in one of three distinct modes: 1) full configuration mode, 2) proportional configuration mode, or 3) sleep mode. Wolfe, ¶51.

In full configuration mode, the entire available display area is in a powered-on state to perform display functions and receive user input. '612 patent, 2:1-7 (“According to some embodiments, an entire device display screen may function in a full configuration mode where the entire available display screen is in a power-on state. For example, a powered-on state may cause the affected part of the display to perform display functions and receive user input.”). Wolfe, ¶52.

In proportional configuration mode, a portion of the display is in the powered-on state while another is in a powered-off state, where the powered-off portion does not perform display functions or receive user input. '612 patent, 2:9-14 (“The proportional configuration mode may configure a portion of the display screen in the powered-on state and another portion of the display in a powered-off state (in an

example powered-off state, the affected part of the display may be configured to not perform display functions and to not receive user input).”). Wolfe, ¶53.

Finally, in sleep mode, “at least some portion or all of the display may be configured with limited or no functionality.” ’612 patent, 29:46-56. Wolfe, ¶54.

The ’612 patent also describes a “locked state,” where the device displays an “unlock image” and is able to detect a user contact with the touch-sensitive display. If the detected user contact is a predefined gesture corresponding to a proportional configuration mode, the portable electronic device will transition from the locked state into a proportional configuration mode. Similarly, if the detected user contact is a predefined gesture corresponding to a full configuration mode, the portable electronic device will transition from the locked state into the full configuration mode. ’612 patent, 29:30-30:38. Wolfe, ¶55.

In some embodiments, transitioning between display modes may be prompted when the remaining battery power of a device reaches a battery-power threshold. ’612 patent, 33:6-9. Wolfe, ¶56.

Certain embodiments of the ’612 patent also have a power management module (*e.g.*, power management module 2500, shown in Fig. 25) for managing display power consumption. ’612 patent, 25:32-34. The power management module may manage display power consumption by configuring the color (*e.g.*, black, white,

grayscale and other colors) of the display based on a corresponding state or mode of the display. *Id.*, 26:1-12, 32:49-55. Wolfe, ¶57.

According to the specification, manipulating the display of a portable electronic device to operate in a proportional configuration mode and/or display in grayscale or black and white can improve “power efficiency” and result in an extended battery life. ’612 patent, 6:47-49. Wolfe, ¶58.

B. Prosecution History

The application for the ’612 patent, Application No. 14/257,888, was filed on 4/21/2014. The ’612 patent is a continuation-in-part of U.S. Patent 8,717,328, which is a continuation of U.S. Patent 8,593,427.

On 9/25/2014, all claims were rejected as obvious under prior art not at issue in this petition. On 11/25/2014, applicant amended all pending claims by, *inter alia*, amending claim 1 to add elements similar to those labeled herein as [1f]-[11]. Similar amendments were made to the other independent claims (with one difference discussed below). Ex.1027 at 120-124.

On 2/18/2015, all claims were once again rejected as obvious. On 5/18/2015, applicant amended all independent claims to recite that transitions to either full or partial configuration modes are invoked by different particular unlock gestures. *Id.* at 61-64. On 5/28/2015, a Notice of Allowance issued. *Id.* at 13-20. In the Reasons for Allowance, the Examiner explained that it was the use of “another particular

unlock gesture of the unlock gestures” to enter into a “proportional configuration mode” that distinguished the claims from the prior art. *Id.* at 18-19. Wolfe, ¶¶59-62.

C. Effective Filing Date

The effective filing date of the ’612 patent is 4/21/2014. While the ’612 patent claims priority to U.S. Patents 8,717,328 (Ex.1028) and 8,593,427 (Ex.1001), and the benefit of Provisional Applications 61/822,267 (Ex.1033) and 61/826,673 (Ex.1034), filed on May 10, 2013 and May 23, 2013, respectively, no claims of the ’612 patent are supported by any of them. Wolfe, ¶63. Therefore, the effective filing date is the actual filing date (4/21/2014). *See PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008); 35 U.S.C. § 119(e).

At least elements [1f]-[1i], [10g]-[10j] and [14f]-[14l] are not disclosed in any application from which the ’612 patent claims priority. Wolfe, ¶64. Specifically, none of the previously-filed priority applications (or their original claims) include any disclosure of an unlock image, much less “an unlock image comprising at least one of, time, date, or an indication of an email, text message, or voice message,” nor do the preceding applications include any disclosure of graphical indications displayed in black, white, grayscale, or in color. Likewise, none include any disclosure of a phone that, when in a locked state, responds to unlock gestures. Finally, none include any disclosure of a phone that transitions from a locked state

to an unlocked state and enters a full configuration or a proportional configuration mode depending on a particular unlock gesture. *Id.* The following portions of the '612 patent do not appear in any of the preceding applications, and no other portions provide support for elements [1f]-[11], [10g]-[10j] and [14f]-[14l]: Figs.19A, 33-46, 1:40-44, 1:49-55, 2:1-30, 3:53-55, 4:25-55, 5:48-7:4, 23:52-24:40, 26:1-16, 27:14-23, 29:7-11, 29:30-34:34. *Id.*

In the copending litigation, Dareltech admitted that the terms “grayscale,” “unlock image,” “unlock gesture” do not appear in the parent ('328 patent). Ex. 1037 at 3-7. But Dareltech asserts that the parent discloses “unlocking the device” and an “unlock process” in ¶114, and discloses several grayscale figures (*e.g.*, Fig. 4) which reflect a display area capable of displaying content in a grayscale. *Id.* Generic statements not sufficient to support a priority claim, since the subject matter of the claims “must necessarily be present in the parent application’s specification such that one skilled in the art would recognize such a disclosure.” *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1159 (Fed. Cir. 1998). Likewise, “[a] disclosure in a parent application that merely renders the later-claimed invention obvious is not sufficient to meet the written description requirement; the disclosure must describe the claimed invention with all its limitations.” *Id.*, 1158. The '612 patent does not meet these standards. A POSITA would not understand elements [1f]-[11], [10g]-[10j] and

[14f]-[14l] to necessarily be present in the '328's specification. Likewise, a POSITA would not see any grayscale images in of the figures. Wolfe, ¶¶65-67.

D. Level of Ordinary Skill in the Art

For purposes of this IPR, a person of ordinary skill in the art ("POSITA") at the time of the alleged invention of the '612 patent would have had a 4-year degree in electrical engineering, computer engineering, or computer science and one year of experience in user interface software or system design. One can also obtain similar knowledge and experience through other means. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Wolfe, ¶70.

E. Claim Construction - "locked state" (claims 1, 10, 14 and 16)

In this proceeding, the claim terms should be given their plain and ordinary meaning as understood by one of ordinary skill in the art, consistent with the disclosure and the prosecution history. 83 Fed. Reg. 51, 340-59 (Oct. 11, 2018). In addition to the below, Samsung addresses the meaning of other claim language while comparing the claims to the prior art so that such language can be discussed in context.

The ordinary meaning of "locked state" in the context of the claims and specification is "*a state in which a user is prevented from accessing specific functions or capabilities.*" Wolfe, ¶73. This is consistent with the '612 patent disclosure that "a screen or device may be set to a user interface lock state by any

predefined manner where the lock state prevents the device from performing a predefined set of actions.” ’612 patent, 29:57-60. The ’612 patent further describes a “lock state” as providing “a limited number of graphic(s) via the display and respond to a limited number of input commands (e.g., only responding to one or a few types of particular input, such as a particular swipe with respect to a displayed object).” *Id.*, 29:38-42. The patent further states that Fig. 35 illustrates a device in a “lock state” where “graphical indications” (*e.g.*, time) are displayed:

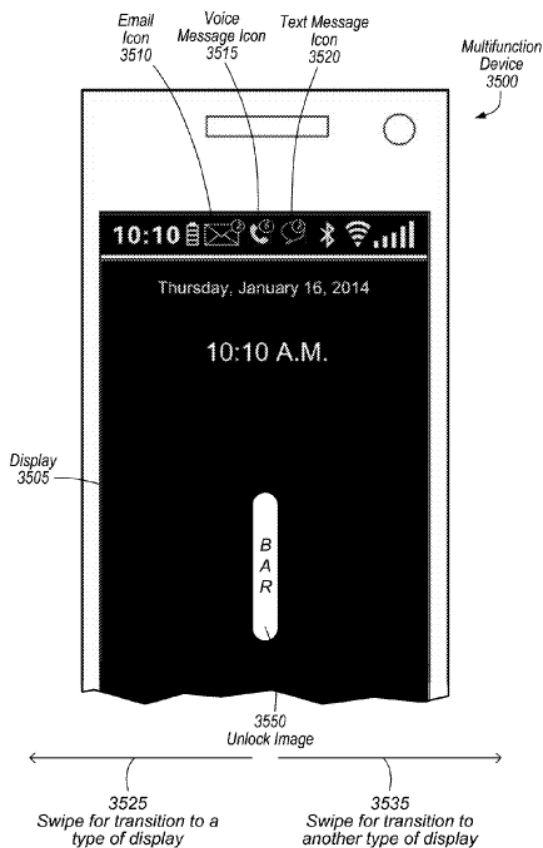


FIG. 35

Id., 30:22-35. Thus, Samsung’s construction is consistent with the intrinsic evidence. Wolfe, ¶74.

F. The Board Should Institute Review

No reference in this Petition was cited or relied on during prosecution of the ’612 patent. Likewise, no previous petitions for *inter partes* review have been filed challenging any claim of the ’612 patent. As detailed below, claims 1-19 of the ’612 patent are invalid.

V. THE PRIOR ART RENDERS THE CLAIMS OBVIOUS

A. The Prior Art

1. *Park* (Ex. 1028)

International Patent Publication WO2013/172507 (“*Park*”), entitled “Portable Electronic Device and Method for Controlling the Same,” was published on 11/21/2013, and is thus prior art under 35 U.S.C. § 102(a)(1). *Park* discloses a portable electronic device such as a mobile phone having a touch-sensitive display. *See Park*, ¶¶1, 123, Figs. 2-10.

Park discloses that at least a portion of a display can be deactivated to “achieve power saving effects[.]” *See, e.g., Id.*, ¶84. For example, *Park* discloses that “the portable device 10 may deactivate at least one of a light emitting element and a touch sensor of each of the first and second display units.” *Id.*, ¶83-84.

Park discloses that when a display unit¹ is in an “active state,” “the portable device may activate at least one of the light emitting element and the touch sensor of the display unit.” *Id.*, ¶53. *Park* teaches that the display can use various technologies, including LED or OLED. *Id.* A POSITA would have known that OLED technology is an emissive technology that requires no backlighting. Thus, in displays using OLED technology, each pixel generates its own light output within the available color spectrum. A POSITA would have also known that each individual pixel can be disabled, *i.e.*, turned off, such that the disabled pixels generate no light at all. Thus, a POSITA would have known that disabled pixels in an OLED display consume very little or no power. Wolfe, ¶77.

Park further discloses that a display unit may be maintained in a “ready-to-activate” state before it switches to an active state. *Park*, ¶51. In this “ready-to-activate” state, at least one of the light-emitting element and the touch sensor of the display unit is inactive. *Park*, ¶52. Wolfe, ¶78.

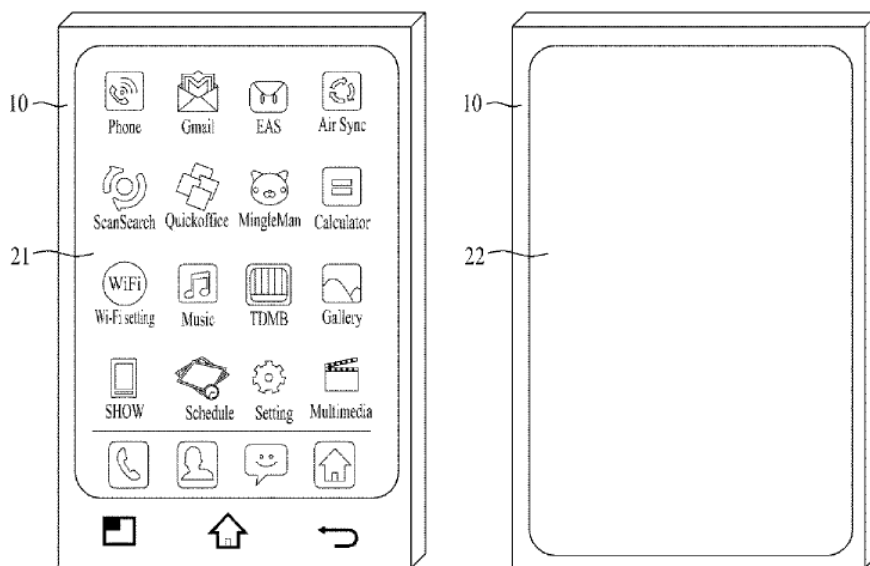
In addition, *Park* discloses that a display unit may be maintained in a “locked state” in which it is inactive and at least one of a light emitting element and a touch-sensor of the display unit is inactive. *Park*, ¶50. In particular, *Park* discloses that a

¹ As explained below, *Park*’s use of the term “display unit” can refer to a portion of a flexible display screen. *Park*, ¶48; Wolfe, ¶81.

display unit, when in the locked state, “may partially activate the touch sensor or the light emitting element of the display unit in order to detect an unlock command input by the user or to inform the user of how to input an unlock command.” *Id.*; Wolfe, ¶79.

Park’s Fig. 4a illustrates a portable device 10 having a first display unit 21 in an active state and a second display unit 22 in a locked state or ready-to-activate state:

[Fig. 4a]

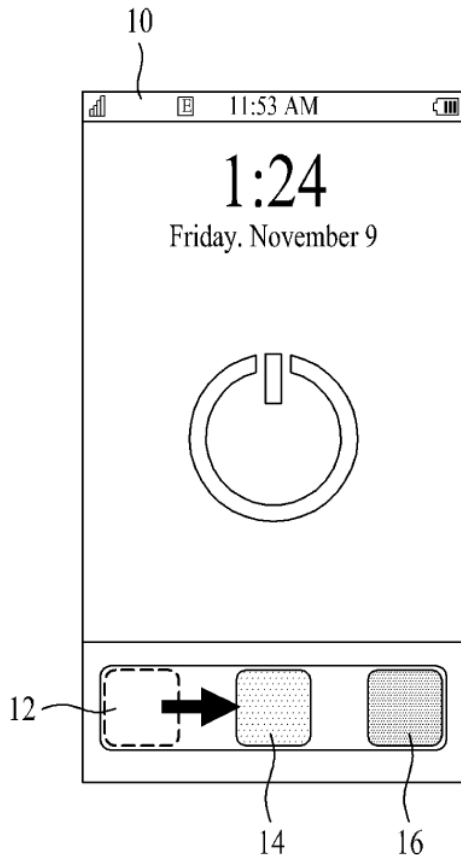


Although *Park*’s figures, *e.g.*, Fig. 4a, show first display unit 21 and second display unit 22 as separate from one another, *Park* discloses an embodiment in which first display unit 21 and second display unit 22 are part of a single display screen. *Park*, ¶48. More specifically, *Park* discloses that its device may include a flexible display and that, in that embodiment, “first display unit” should be understood to

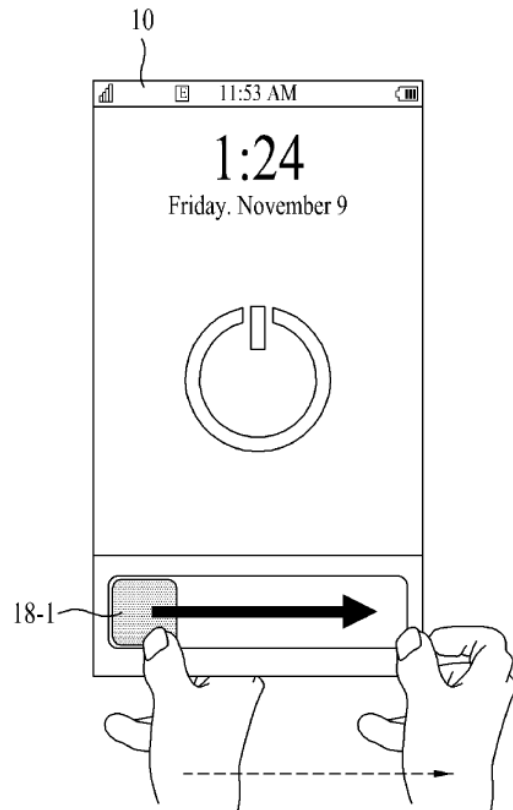
refer to a first portion of the display, while “second display unit” should be understood to refer to a second portion of the display. *Park*, ¶¶48, 123. For purposes of this Petition, *Park*’s “first display unit” and “second display unit” refer to first and second portions, respectively, of a single flexible display screen in accordance with *Park*’s disclosure. *E.g.*, *Park*, ¶48; *Wolfe*, ¶¶80-81.

Park’s Figs. 2a and 3a illustrate how the first display portion may appear when in the locked state:

[Fig. 2a]



[Fig. 3a]



As shown in *Park*'s Figs. 2a and 3a, when the first display unit is in the locked state, an interface is displayed so that a user may provide input that causes the display unit to transition from the locked state to another state. *Park*, ¶¶63-74. Wolfe, ¶82.

In sum, *Park* discloses a device having the same purpose as the '612 patent (a mobile device that consumes less power to extend battery life) and does so using the same features claimed in the '612 patent (disabling portions of the display screen).

Park discloses several display configurations, including: 1) first and second portions of the display in the locked state; 2) first and second portions of the display in the active state; and 3) first portion in the active state and second portion in the ready-to-activate state. This table shows how each configuration corresponds to one of the modes described in the '612 patent:

<i>Park</i> First Portion	<i>Park</i> Second Portion	'612 Patent
locked state	locked state	"sleep mode"
active state	active state	"full configuration mode"
active state	ready-to-activate state	"proportional configuration mode"

Wolfe, ¶84.

2. *Newman* (Ex. 1029)

U.S. Patent Pub. No. 2013/0111378 ("*Newman*"), entitled "Portable Electronic Device, Associated Apparatus and Methods," was filed on 10/31/2011,

and is thus prior art under 35 U.S.C. § 102(a)(2). *Newman* describes a portable electronic device having multiple modes of operation. *Newman*, ¶1. With respect to the modes, *Newman* discloses “different colour schemes in different modes of operation[,]” including where graphical indications are displayed in color. *Newman*, ¶147. “For example a portable electronic device may be configured to, in a first mode, display (e.g. information such as text, map or image) in colour, and, in the second mode, display in black and white.” *Newman*, ¶147.

Newman teaches that “in a fully active mode, the full range of functionality and information provided by one or more application(s) are generally available to the user.” *Newman*, ¶3. Moreover, “[i]f multiple applications are used, a significant amount of processor activity and/or power would be required.” *Newman*, ¶3. *Newman* discloses several solutions to address this.

For example, *Newman* discloses that “to lower processor activity and/or power consumption (*e.g.*, to extend battery life) the user may turn off the portable electronic device, or enter a mode wherein user interaction with the portable electronic device is prevented and functionality is disabled (other than allowing the user to return the portable electronic device to the active mode).” *Newman*, ¶4.

Newman discloses other solutions, *e.g.*, “low power mode,” which includes “configuring the pixels corresponding to the background to be turned off (making them black) and configuring the pixels corresponding to text and user interface

elements to be white.” *Newman*, ¶136. Doing so “reduces the power consumption of the screen whilst the portable electronic device is on the second mode.” *Id.* *Newman* further discloses that “other example embodiments may be configured to turn all or portions of a screen into a low power mode (e.g. by turning off a backlight, reducing the contrast, selecting colour schemes which reduce power).” *Id.* “Such forms of output can be considered to be low power output.” *Id.* *See also Newman*, ¶94; *Wolfe*, ¶¶85-88.

3. *Ording* (Ex. 1030)

U.S. Patent No. 8,842,074 (“*Ording*”), entitled “Portable Electronic Device Performing Similar Operations for Different Gestures,” was filed on 9/5/2007, and is thus prior art under 35 U.S.C. § 102(a)(2). *Ording* describes a device with touch-sensitive display. *E.g.*, *Ording*, Abstract, 5:22-26. *Ording*’s device can be in a “user-interface unlock state” or a “user-interface lock state.” *Id.*, 12:21-30. *Ording*’s Fig. 4 illustrates interface 400, which is displayed when in the “user-interface unlock state:”

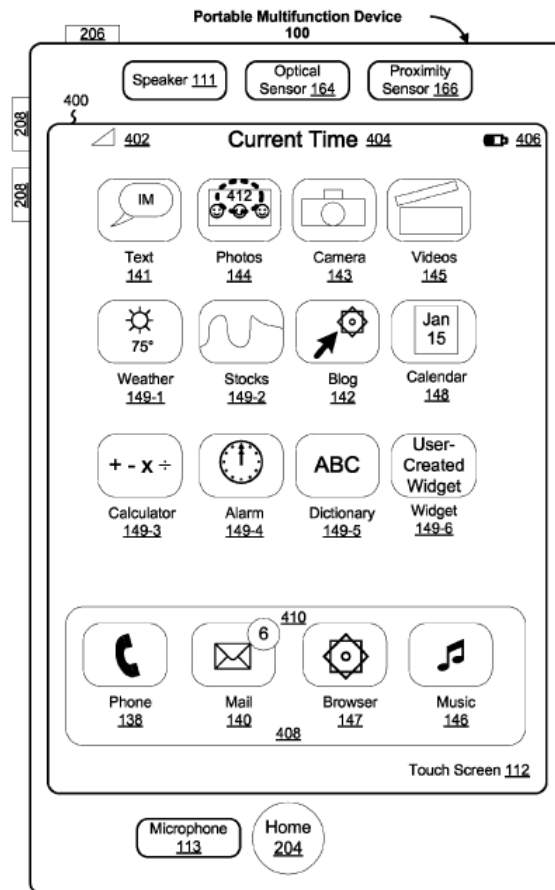


Figure 4

Id., 12:36-63. A plurality of graphical indications (*e.g.*, time 404) are displayed on user interface 400.

Ording's Fig. 3 illustrates interface 300, which is displayed when in the "user-interface lock state," and which is used when unlocking a device:

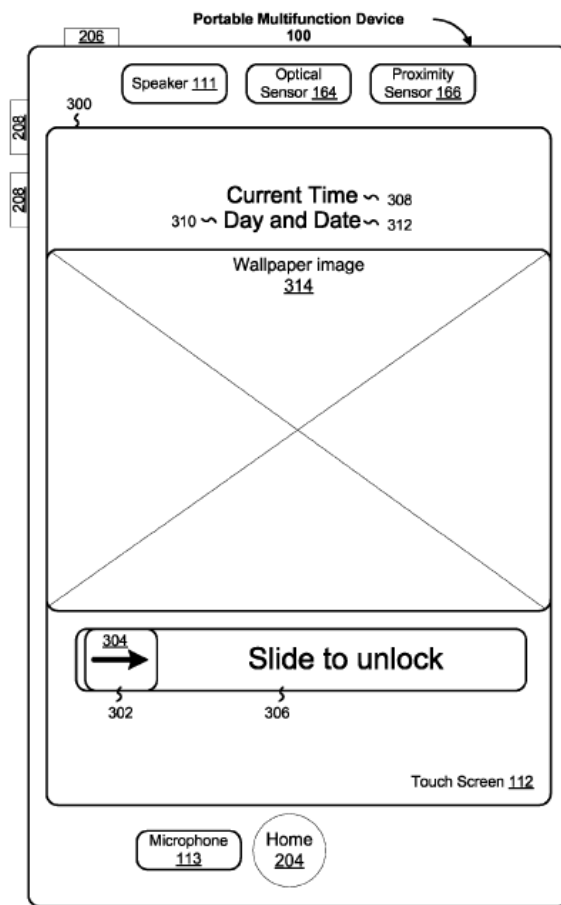


Figure 3

Id., 12:7-20. The time 308 is also displayed in this state. Wolfe, ¶¶89-90.

4. *Siwinski* (Ex. 1031)

U.S. Patent No. 7,012,588 (“*Siwinski*”), entitled “Method For Saving Power in an Organic Electroluminescent Display Using White Light Emitting Elements,” was patented on 3/14/2006, and is thus prior art under 35 U.S.C. § 102(a)(1). *Siwinski* recognized that OLED displays were useful in “battery powered portable electronic devices such as ... cellular telephones (*Siwninski*, 1:23-26)” and describes

a particular type of OLED display that is capable of conserving power when operating in a grayscale mode. *Id.*, 2:15-22. Wolfe, ¶¶91.

5. Yang (Ex. 1002)

U.S. Patent Pub. No. 2014/0189583 (“*Yang*”), entitled “Displaying Area Adjustment,” was filed in the United States on 6/25/2013 and claimed priority to PCT Application No. PCT/CN2012/087795 (Ex. 1006), which was filed on 12/28/2012, designated the United States, meaning it has an effective filing date of 12/28/2012. *See* 35 U.S.C. § 102(d). *Yang* is prior art under 35 U.S.C. § 102(a)(2).

Yang discloses a portable electronic device such as a mobile phone, and recognizes that the “display of a portable electronic device is another feature that is a big consumer of battery charge[,]” *see Yang*, ¶19 *Yang* teaches that its device may conserve power while in a normal operating mode by switching from an original screen mode (“OSM”) to an adjusted screen mode (“ASM”), where a portion of the display area is inactive. *Id.*, ¶29.

In one embodiment, *Yang* discloses that the switch from OSM to ASM may occur automatically as a function of battery capacity. *Id.*, ¶33. For example, “if the battery reaches a capacity that is at or below a certain percentage of total battery capacity (e.g., 30%, 25%, 20%, 15%, 10%, 5%) display 102 may be automatically switched from OSM to ASM to conserve the remainder of the battery power.” *Id.* ¶¶33, 90. Wolfe, ¶¶92-94.

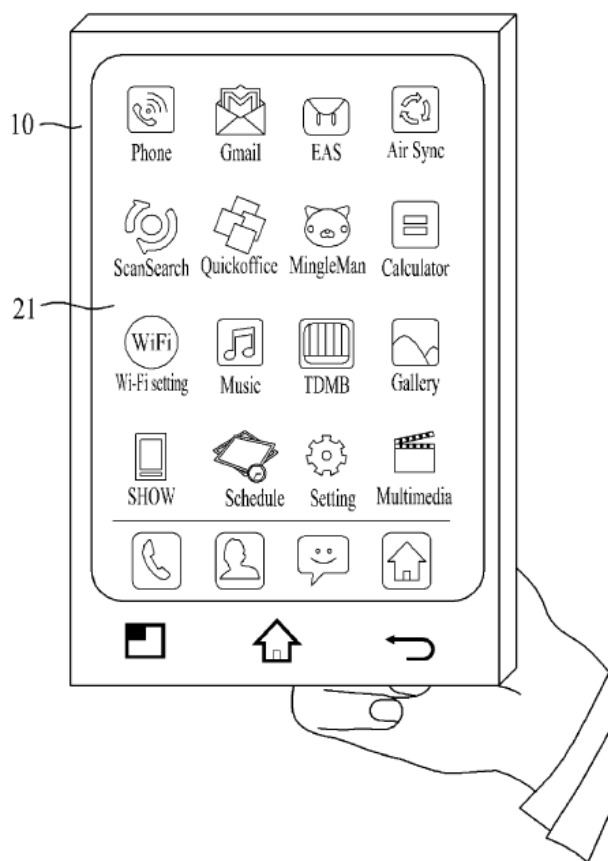
B. Grounds 1A/1B: *Park* in view of *Newman* (1A) and *Park* in view of *Newman* and *Ording* (1B) render obvious claims 1-2, 5-6, 9-15, and 18

1. Claim 1

[1p] “A portable phone comprising”

To the extent the preamble is limiting, *Park* discloses a “portable phone.” *Park* is entitled “Portable Device and Method for Controlling the Same” and extensively refers to a “portable device” throughout its disclosure. *Park*’s Figs. 4a-4b, 5a-5b, 6, 7a-7b are described as illustrating a “portable device.” *See Park*, ¶¶36-39. Each of those figures includes an icon expressly labeled “Phone,” indicating that the device can make phone calls, and thus a POSITA would have understood the device is a phone. *Park*, Figs. 4a-4b, 5a-5b, 6, 7a-7b; Wolfe, ¶95. As just one example, Fig. 7a is reproduced below, where one can see the “Phone” icon its upper left corner:

[Fig. 7a]



Wolfe, ¶96. Portable phones like that in *Park* were well-known in the United States long before the '612 patent was filed in 2014. *Id.* See e.g. *Newman*, ¶¶91-92.

[1a] “a display comprising a display screen”

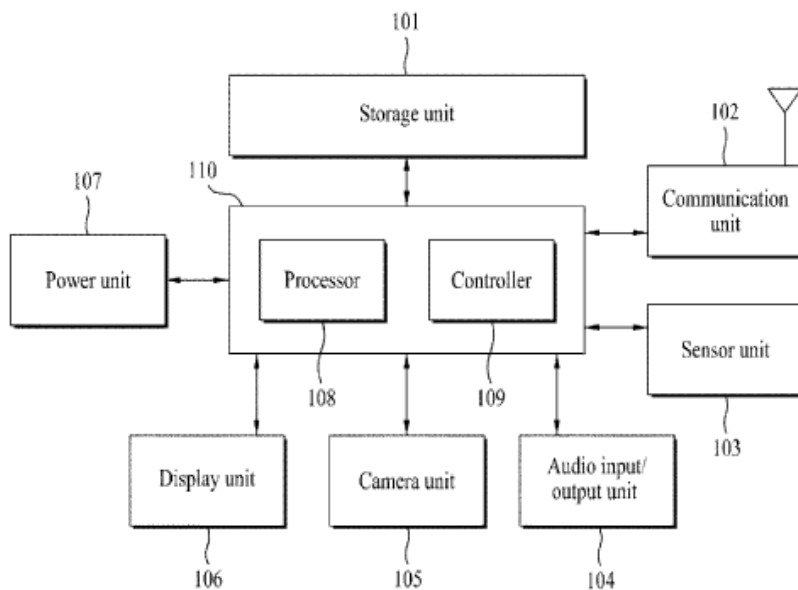
Park extensively refers to a “display unit” throughout its disclosure. See, e.g., *Park*, ¶48 (“A display unit included in the portable device displays content, an application, or the like to the user.”). *Park* discloses that “[t]he display unit 106 may output an image to a screen.” *Park*, ¶123. As discussed, *Park* further discloses that its device may use a flexible display where the “first display unit” is a first portion

of the display, while the “second display unit” is a second portion of the display. *Park*, ¶¶48, 123. This flexible display corresponds to the claimed “display comprising a display screen.” *E.g.*, *Park*, ¶48; *Wolfe*, ¶¶97-98. Indeed, it was well-known to POSITAs before the patent’s filing that a single flexible display could have two or more display portions and that the display could be folded such that the first portion is on a first side of a device and the second portion is on the reverse side of the device when folded. *Id.*, ¶99; *see also* Ex. 1036.

[1b] “one or more processors”

Park discloses that its portable device includes a processor. *Park*, ¶117, Fig. 11. *Park*’s processor 108 is illustrated in Fig. 11:

[Fig. 11]



Wolfe, ¶100.

[1c] “a memory comprising program instructions, wherein the program instructions are executed by the one or more processors to implement . . .”

Park discloses a “storage unit” that serves as a memory, where the memory can use various memory technologies, *e.g.*, flash memory. *Park*, ¶¶117-118. *Park* further discloses that “[t]he processor 108 may execute various applications stored in the storage unit 101 and may process data in the portable device.” *Park*, ¶124. A POSITA would understand that executing applications in this context means that storage unit 101 stores program instructions that are executed by processor 108. *Wolfe*, ¶101.

Although *Park* states that storage unit 101 may be optional, *Park*, ¶118, a POSITA would understand that *Park*’s embodiments have a memory storing instructions. *Park* discloses that the processor, in conjunction with a controller, may perform the operations described therein, including detecting unlock commands and switching the state of a display according to the detected unlock commands. *Park*, ¶125. For a processor to perform such operations, the processor would execute program instructions, and those instructions would be stored in a memory. *Wolfe*, ¶102.

Newman also discloses this element, stating that a “memory (107) may store computer program code and/or applications which may be used to instruct/enable the processor (108) to perform functions (*e.g.* read, write, delete, edit or process

data).” *Newman*, ¶126. In light of the processor/memory disclosures in *Park* and the ubiquity of processors running instructions from memory in the art, it would have been obvious to use the processor/memory configuration in *Newman* together with *Park*. Wolfe, ¶103.

[1d] “a power management module configured to manage power consumption of the display”

The ’612 patent describes a screen power management module as one that *inter alia* receives input system events and user stimulus, and generates as output new state information. ’612 patent, 25:31-41. Fig. 1 of the ’612 patent shows screen power management module 158 as being stored in memory 102, which communicates with CPU chip 104, and Fig. 25 provides additional detail regarding sub-modules found therein. Thus, a POSITA would understand that the ’612 patent describes its power management module using generalized structural and functional descriptions. *Park*’s description is similar, disclosing a device that detects “user touch input,” which may correspond to one of several unlock commands (*e.g.*, *Park*, ¶63). *Park* further discloses a chip including processor 108 and controller 109 that receive instructions, and that generates, as output, a new state for the device. *Park*, ¶125; Fig. 11. *Park* also discloses that, in response to user input (*i.e.*, unlock commands), the states of display units are switched. *Park*, ¶64. *Park* also discloses that the purpose of switching the states of display units differently in response to

different unlock commands is “to prevent unnecessary power consumption.” *Park*, ¶145. Wolfe, ¶¶104-105. A POSITA would understand that these teachings are the same as in the ’612 patent and thus correspond to the recited “power management module.” *Id.* *Newman*, discussed below, describes similar structures also corresponding to the recited “power management module.” *Newman*, ¶125. Accordingly, *Park* (and *Newman*) discloses “a power management module configured to manage power consumption of the display.” Wolfe, ¶106.

[1e] **“wherein when the display is not in a sleep mode the power management module directs a display controller to display a set of a plurality of graphical indications in color in a full configuration mode that puts substantially all of the display screen in a powered-on state”**

Park in view of *Newman* discloses this element. This element recites two modes: “sleep mode” and “full configuration mode.” According to the ’612 patent, when in sleep mode, “at least some portion or all of the display may be configured with limited or no functionality.” ’612 patent, 29:53-55. The claim itself describes “full configuration mode” as one where the graphical indications are in color and “substantially all of the display screen in a powered-on state.”

Park discloses that the first and second portions of its flexible display can be in different states. *Park* calls one of those states the locked state:

The term “**locked state**” refers to a state in which the display unit is inactive and at least one of a light emitting

element and a touch sensor of the display unit is inactive.

When the display unit is in a locked state, the portable device cannot provide an application or content to the user through the display unit. However, the portable device may partially activate the touch sensor or the light emitting element of the display unit in order to detect an unlock command input by the user or to inform the user of how to input an unlock command.

Park, ¶50.²

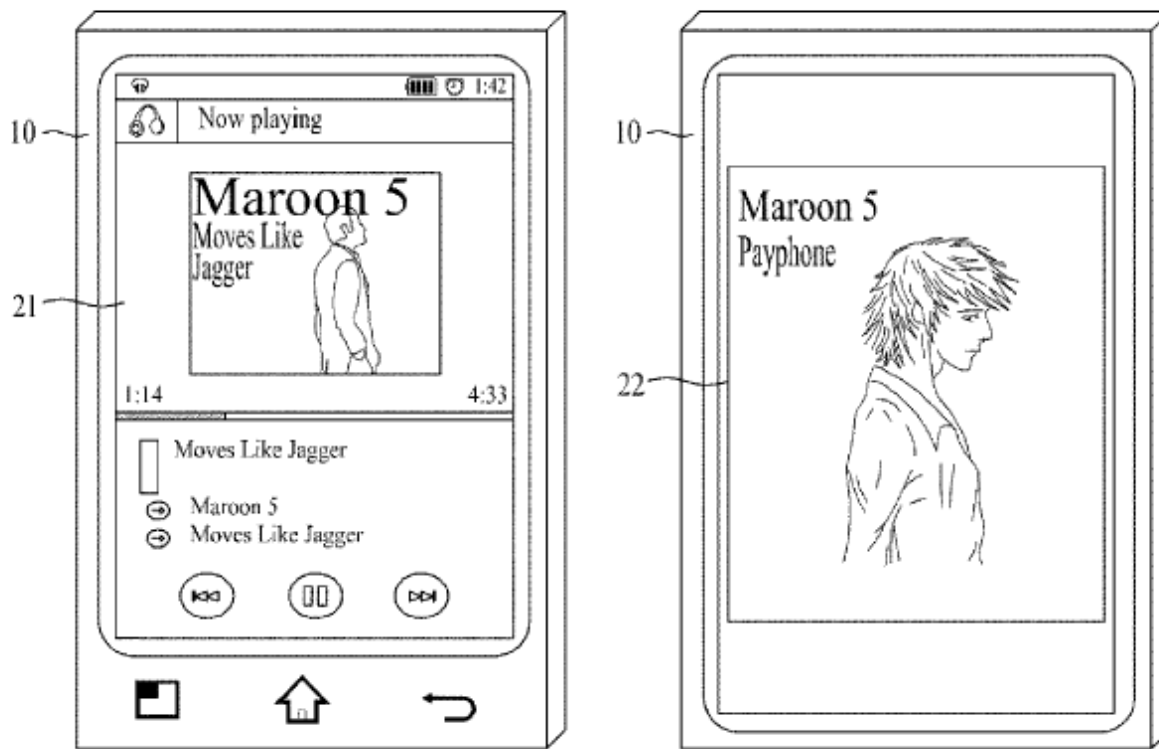
A POSITA would have understood that *Park*'s configuration where first and second portions of the flexible display are both in the locked state corresponds to the recited "sleep mode" because, just as in the '612 patent, "at least some portion or all of the display may be configured with limited or no functionality." '612 patent, 29:53-55. For example, as seen in the above quote, *Park*'s locked state disallows display of applications and content but allows for unlocking a device, which is "limited" functionality. Wolfe, ¶107-109.

Park's first and second display portions can also be in what it calls the active state:

The term "**active state**" refers to a state in which the display unit is active. When the display unit is switched to the active state, the portable device may activate at least

² Unless otherwise stated, Samsung has added all emphasis to quotes.

[Fig. 10a]



As seen, all of the display screen (*i.e.*, both first and second portions 21-22) is in an active state and displaying a plurality of graphical indications (*e.g.*, icons.) *See also*, *Park*, ¶¶53, 78-79. The following table illustrates several states *Park*'s first and second display portions can be in, and which combination of states corresponds to the “modes” disclosed and claimed in the '612 patent:

'612 Patent Mode	<i>Park</i> First Portion	<i>Park</i> Second Portion
“sleep mode” / “locked state”	locked state	locked state
“full configuration mode”	active state	active state
“proportional configuration mode” ³	active state	ready-to-activate state

Wolfe, ¶¶110-111

Accordingly, *Park* discloses that when its device is not in a sleep mode, the power management module causes display controller (controller 109) to cause the display to display a set of a plurality of graphical indications in a full configuration mode that puts substantially all of the display screen in a powered-on state. *See e.g.*, *Park*, ¶¶117, 125; Wolfe, ¶112.⁴

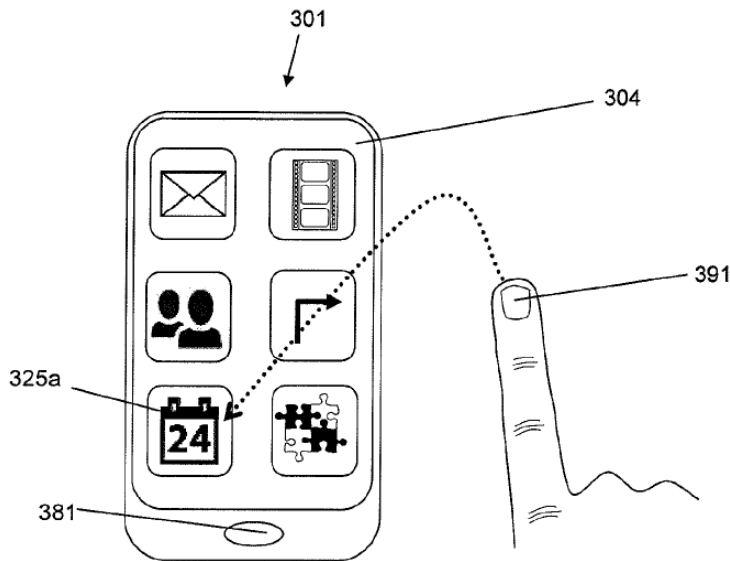
³ See element [11].

⁴ A POSITA would understand that, technically, a display controller is incapable of displaying content, but that the controller may cause a display to display content. Wolfe, ¶113. To the extent this element is interpreted to make it comprehensible, a POSITA would understand the claim language “directs a display controller to display...” to mean “directs a display controller to cause a display to display.” *Id.* Independent claims 10 and 14 do not have this issue, as they recite a display that displays information.

Park does not expressly state that its graphical indications are displayed in color. However, *Park* discloses that the display may be an OLED display. *Park*, ¶53. When the '612 patent was filed, it was well-known for such displays to display graphical information in color. Wolfe, ¶114. Thus, a POSITA would have understood that the graphical indications displayed by *Park* when both display units are in the active state (*i.e.*, “full configuration mode”) could have been displayed in color, and a POSITA would have found it obvious to display information in color when in that mode. *Id.*

To the extent Dareltech argues that *Park* does not disclose displaying a set of a plurality of graphical indications in color in a full configuration mode, *Newman* satisfies this limitation. *Newman* is similar to *Park* (and the '612 patent) because it discloses a device having a “third mode” in which “at least some portion or all of the display may be configured with limited or no functionality ('612 patent, 29:53-55),” but where the display allows unlocking (*Newman*, ¶¶65-67), and a “first mode” in which substantially all of the display is powered-on and icons are displayed as illustrated in Fig. 3a of *Newman* (below) (as with *Park*'s active state):

Figure 3a



See also *Newman*, ¶133. A POSITA would have understood that *Newman*'s "first mode" corresponds to the recited "full configuration mode" since the display performs display functionality, and that *Newman*'s "third mode," which *Newman* states "may provide for a sleep mode (*id.*, ¶65)," corresponds to the recited "sleep mode" because "at least some portion or all of the display may be configured with limited or no functionality ("612 patent, 29:53-55)." See *Newman*, ¶67 ("The apparatus may be configured, when in the third mode, to disable user interaction with one or more applications configured to run on the apparatus but allow the user to unlock the portable electronic device to enter the first mode of operation."); see also *id.*, ¶¶64-66, 123; *Wolfe*, ¶¶115-116.

Newman also discloses that when in the first mode (see Fig. 3a), graphical content is displayed "in colour." *Newman*, ¶147. Accordingly, *Park* in view of

Newman discloses “wherein when the display is not in a sleep mode the power management module directs a display controller to display a set of a plurality of graphical indications in color in a full configuration mode that puts substantially all of the display screen in a powered-on state.” Wolfe, ¶117. It would have been obvious to a POSITA to combine *Park*’s and *Newman*’s teachings so that *Park*’s graphical indications were displayed in color since virtually every touchscreen display manufactured as of the effective filing date were color displays, and a POSITA would have understood that users of such devices would have expected and desired that devices like those in *Park* should normally display information in color, as taught by *Newman*, and that as such, market forces would have motivated this combination. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (“When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one.”); *see also* Wolfe, ¶117. Further motivation to combine *Newman* with *Park* is discussed below with respect to element [1i].

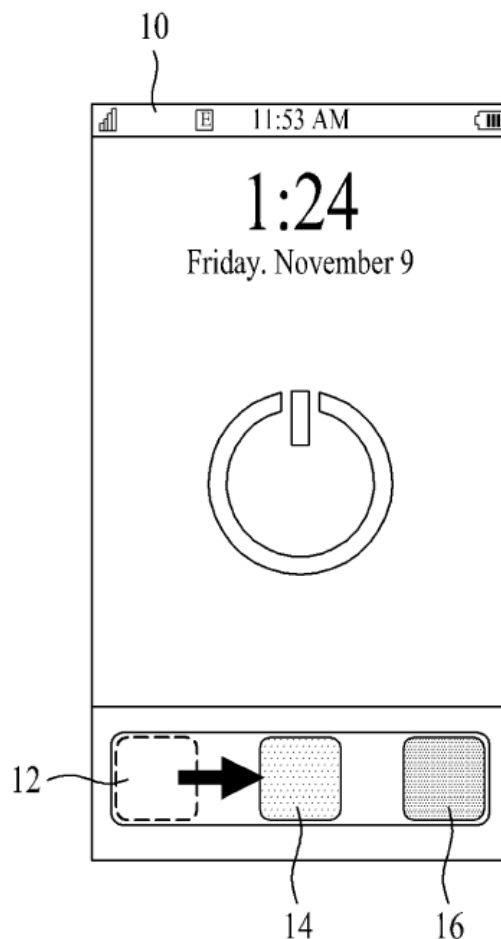
[1f] “wherein when the display is in a sleep mode, the power management module directs the display controller to display a subset of the plurality of graphical indications”

This element requires that when in the recited “sleep mode,” the power management module directs the display controller to “display a subset of the

plurality of graphical indications.”⁵ As discussed regarding element [1e], *Park* discloses a device having a configuration (*i.e.*, first and second portions of its flexible display in a locked state) (*Park*, ¶50) corresponding to the recited “sleep mode” because a portion of the display has limited functionality. Wolfe, ¶¶118-119. *Park*’s Fig. 2a illustrates an unlock screen that can be displayed on a first portion of its flexible display when in the locked state:

⁵ As discussed, a POSITA would understand that this claim language should have recited that the display controller causes the display to display information. The other independent claims do not have this issue.

[Fig. 2a]

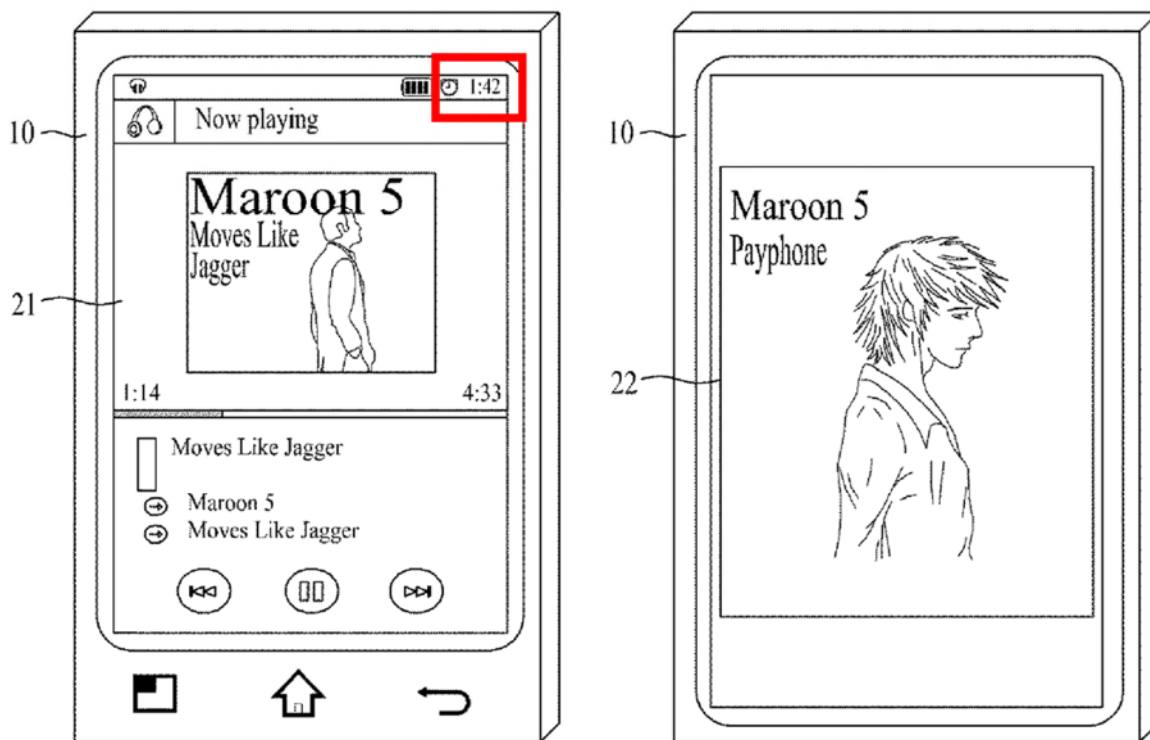


See also *Park*, ¶¶63, 66-67. The unlock screen illustrated in Fig. 2a displays graphical indications, including time. Wolfe, ¶119. *Park* further discloses that both display portions were placed in the locked state (*i.e.*, “sleep mode”) by the controller, which manages power consumption of the device. *E.g.*, *Park*, ¶5. Thus, *Park* discloses that its controller (*i.e.*, “power management module”) “directs the display controller to display a subset of the plurality of graphical indications” since it directs the display controller to display the time and date on *Park*’s flexible display.

(i) Grounds 1A

Park's Fig. 10a shows an embodiment where both the first and second portions of its flexible display are in the active state, thus corresponding to the claimed “full-configuration mode:”

[Fig. 10a]



As seen red-boxed, one of the graphical indications displayed in the first portion of *Park's* flexible display is the time.

Since *Park* teaches that a time graphical indication is displayed in its mode corresponding to the claimed “full-configuration mode” (as shown in Fig. 10a), and also that a time graphical indication is displayed in its mode corresponding to the

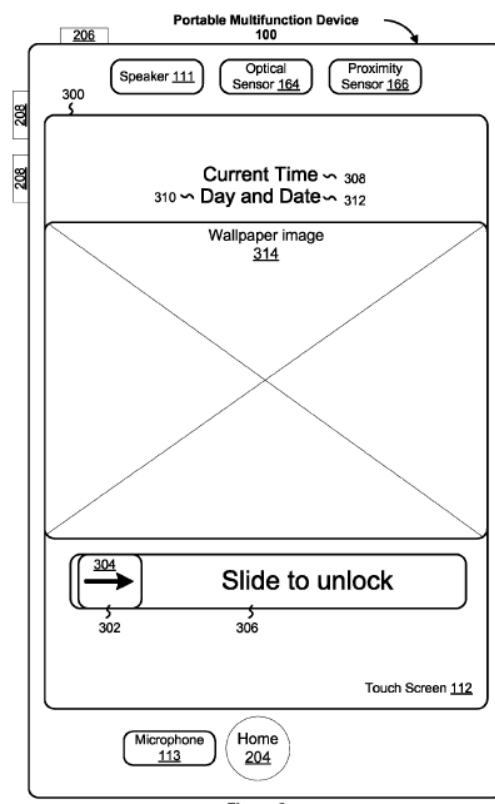
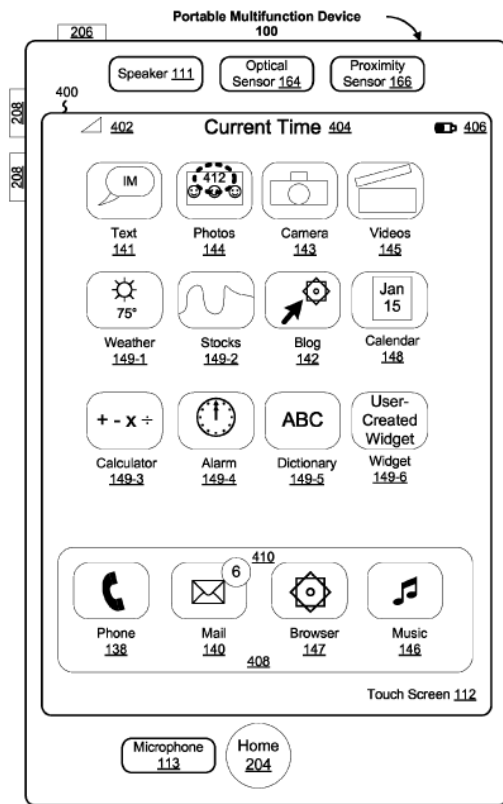
claimed “sleep mode” (as shown in Fig. 2a), *Park* discloses display of “a subset of the plurality of graphical indications” when in the recited sleep mode, and *Park* in view of *Newman* discloses this element. Wolfe, ¶¶120-121.

(ii) Grounds 1B

Park’s Fig. 4b does not show a time graphical indication in its first portion. A POSITA would understand that Fig. 4b does not show this because the drawing is a simplified version of the actual display, as made clear in *Park*’s Fig. 10a, which shows the device displaying a time graphical indication when in a mode corresponding to the claimed “full-configuration mode.” Wolfe, ¶122. To the extent Dareltech argues that *Park* does not disclose that a time graphical indication is displayed when both portions of the flexible display are in the active state (*i.e.*, “full configuration mode”), a POSITA would have recognized that *Park*’s figures are simplified, that such a feature would have been present, but that to the extent the teaching was missing, it would have been obvious to do so, since displaying the time on unlocked mobile device screens was well-known as of the effective filing date, as demonstrated, for example, by *Ording*. *Id.*

Ording discloses a device having a “user-interface lock state” and a “user-interface unlock state.” *Ording*, 12:21-30. A POSITA would have understood that *Ording*’s user-interface unlock state corresponds to the recited “full configuration mode” because, as illustrated in its Fig. 4, substantially all of *Ording*’s display is in

a powered-on state since icons are displayed that a user can touch to access desired applications. *Ording*, 12:8-13:12; Wolfe, ¶123. A POSITA would also have understood that *Ording*'s "user-interface lock state" corresponds to the recited "sleep mode" because, as illustrated in Fig. 3, the screen allows for unlocking but no applications are available for use, meaning that "at least some portion ... of the display [is] configured with limited ... functionality ('612 patent, 29:53-55)." Wolfe, ¶123. Figs. 3-4 are reproduced below:



See also *Ording*, 12:8-13:12.

As illustrated in Fig. 4, when in its user-interface unlock state (“full configuration mode”), *Ording*’s device displays a plurality of graphical indications including application icons and “Current Time.” *Ording*, 12:36-63. As illustrated in Fig. 3, when in its user-interface lock state (“sleep mode”), *Ording*’s device does not display the application icons, but does display “Current Time.” *Ording*, 12:8-20. Thus, the “Current Time” graphical indication displayed when in user-interface lock state (“sleep mode”) is a “subset of the plurality of graphical indications” that were displayed when in user-interface unlock state (“full configuration mode”). Wolfe, ¶124.

Accordingly, *Park* in view of *Ording* discloses “wherein when the display is in a sleep mode, the power management module directs the display controller to display a subset of the plurality of graphical indications.” *Id.*, ¶125.

A POSITA would have understood that *Ording*’s teachings regarding its user-interface lock and unlock states provide additional details regarding what a POSITA would have understood about what is displayed when both of *Park*’s display portions are in either the locked (*i.e.*, “sleep mode”) or active (*i.e.*, “full configuration mode”) states, respectively. Regardless, a POSITA would have been motivated to combine *Ording*’s teaching regarding display of the time in *Park*’s mode corresponding to the recited “full configuration mode.” Wolfe, ¶126. *Park* discloses a portable device that can display graphical indications while in “full configuration mode” (which

Park calls the active state) and “sleep mode” (which *Park* calls the locked state). *Park*, ¶¶63-114, Figs. 2-10. *Park* discloses that a time graphical indication can be displayed on a lock screen when the device is in a mode corresponding to the recited “sleep mode” (i.e., *Park*’s locked state). *Park*, Figs. 2a-2b, 3a-3b. Like *Park*, *Ording* discloses a portable device that can display graphical indications while in modes corresponding to the recited sleep and full configuration modes. *Ording*, 12:5-13:12, Figs. 3-4. *Ording* also discloses that a time graphical indication can be displayed when in “full configuration mode,” in addition to when in “sleep mode.” *Ording*, 12:5-13:12, Figs. 3-4. Wolfe, ¶126.

A POSITA would have been motivated to use *Ording*’s teachings to enable *Park*’s device to display a time graphical indication while in full configuration mode (to the extent *Park* does not teach this). A POSITA would have understood that modifying *Park*’s device to display the time while in “full configuration mode” would have provided a useful feature because it would have allowed a user of the *Park* device to view the current time, regardless of which mode the device was in. Wolfe, ¶127. Moreover, such a feature was well-known in the art as of the ’612 patent’s effective filing date, and as such, market forces would also have motivated a POSITA to include such a feature in *Park*. *Id.*; see also *KSR*, 550 U.S. at 417.

This modification would have been the result of combining prior art elements (e.g., *Park*’s flexible display, which displays the time when in “sleep mode,” and

Ording's device, which displays the time when in both "sleep" and "full configuration" modes) according to known methods (*e.g.*, implementing software instructions on *Park*'s device that cause the device to display the time while in an unlocked state) to yield predictable results (*e.g.*, the convenience of being able to view the current time while the device is unlocked and in "full configuration mode"). Wolfe, ¶128. *KSR*, 550 U.S. at 416-417.

[1g] "the subset comprising an unlock image comprising at least one of, time, date, or an indication of an email, text message, or voice message"

Park (Grounds 1A) and *Park* in view of *Ording* (Grounds 1B) discloses this element. This element recites an "unlock image" that is "at least one of" a number of different graphical indications, one of which is "time." As discussed regarding element [1f], *Park* displays the time when in modes corresponding to the recited "full configuration mode" and "sleep mode" (Grounds 1A), as does *Park* when combined with *Ording* (Grounds 1B). Under either grounds, a graphical indication of the current time corresponds to the claimed "subset of the plurality of graphical indications." Wolfe, ¶129. Thus, the current time displayed by both *Park*'s and *Ording*'s devices on their lock screens corresponds to the recited "unlock image" because it is displayed when the devices are in the recited "sleep mode." *Id.*

Accordingly, *Park* (1A) and *Park* incorporating *Ording*'s teachings (1B) discloses "the subset comprising an unlock image comprising at least one of, time,

date, or an indication of an email, text message, or voice message.” Wolfe, ¶130. A POSITA would have been motivated to incorporate *Ording*’s teachings into *Park* for the reasons discussed regarding element [1f]. *Id.*

[1h] “wherein the subset of the plurality of graphical indications are displayed in a portion of the display screen”

Park (Grounds 1A) and *Park* incorporating *Ording*’s teachings (Grounds 1B) disclose this element. As discussed, *Park*’s Fig. 2a illustrates the time (“the subset of the plurality of graphical indications”) being displayed on a first portion of its flexible display screen, when the first portion of the display is in what they call their locked state, corresponding to the recited “sleep mode.” *Park*, ¶63, Fig. 2a; Wolfe, ¶131. As discussed with respect to element [1f], *Park* (Fig. 10a) and *Ording* (12:8-20, 12:36-63, Figs. 3, 4) disclose that the time displayed in “sleep mode” may be from a subset of graphical indications displayed in the unlocked state (*i.e.*, “full configuration mode”). Wolfe, ¶131. A POSITA would have been motivated to incorporate *Ording*’s teachings into *Park* for the reasons discussed regarding element [1f]. *Id.*

[1i] “are displayed in black, white or grayscale, instead of displayed in color”

This element requires that the graphical elements be displayed in black, white, or grayscale when in the recited “sleep mode.” Because the word “or” separates

these terms, the prior art need only disclose one to meet this limitation. *Brown v. 3M*, 265 F.3d 1349, 1352 (Fed. Cir. 2001). *Park-Newman*, and *Park-Ording-Newman*, disclose this element. Neither *Park* nor *Ording* expressly state that graphical indications are displayed in black, white, or grayscale. *Newman*, however, discloses that graphical indications can be displayed in black or white instead of in color, and that this is done to reduce power consumption. *E.g.*, *Newman*, ¶¶94, 136, 147; Wolfe, ¶133. *Newman* discloses that the portable device described therein “may be configured to, in a first mode, display (e.g. information such as text, map or image) in colour, and, in the second mode, display in black and white.” *Newman*, ¶147; *see also id.*, ¶¶94, 136 (disclosing use of a black and white display mode to reduce power consumption). As discussed regarding element [1e], *Newman* discloses a “third mode,” corresponding to the recited “sleep mode,” having lower power consumption than its second mode. *See Newman*, ¶¶64-67. Wolfe, ¶133.

Although *Newman* does not indicate whether black and white or color are used when displaying information in the third mode, *Newman* discloses using black and white instead of color to reduce power consumption in the second mode relative to the first mode. Because *Newman*’s third mode consumes less power than its second mode, a POSITA would have found it obvious that *Newman*’s third mode also displays information black and white and not in color, just as in *Newman*’s second mode. Otherwise, *Newman*’s third mode would likely have increased power

consumption as compared to *Newman's* second mode, which would be contrary to *Newman's* disclosure and contrary to how a POSITA would have understood *Newman*. Thus, in view of *Newman's* teaching that black and white display mode is used to reduce power consumption, a POSITA would have found it obvious to utilize a black and white display mode in *Newman's* third mode, to help achieve lower power consumption than *Newman's* second mode, as described. Indeed, as Dr. Wolfe explains, a POSITA would have found it obvious that displaying information in black and white using *Newman's* display technology uses less power than displaying the same information in color. Wolfe, ¶134.

A POSITA would have found it obvious to incorporate *Newman's* teachings into *Park/Park-Ording* so that the graphical indications displayed when in “sleep mode” (illustrated, *e.g.*, in *Park's* Fig. 2a) were displayed in black and white. Wolfe, ¶135. *Park* relates primarily to reducing power consumption in a portable device, and discloses a device configured to operate in multiple display modes to reduce power consumption. *See e.g.*, *Park*, ¶¶25, 28, 55-56, 63-67, 75-77, 145. *Newman* also relates primarily to reducing power consumption in a portable device, and discloses a device configured to operate in multiple display modes to reduce power consumption. *See e.g.*, *Newman*, ¶¶4, 64-88, 136. *Newman* further discloses that power may be conserved by reducing the color of a display, or by switching from a

color display mode to a black and white display mode. *Newman*, ¶¶94, 136, 147.
Wolfe, ¶136

A POSITA would have been motivated to incorporate *Newman*'s use of black and white graphical indications when in the "sleep mode" into *Park*'s device to further reduce power consumption in *Park*. Wolfe, ¶¶137-138. Indeed, the Federal Circuit recognizes that reducing power consumption, *e.g.*, increasing efficiency, is sufficient motivation to combine references. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006) (finding motivation to combine exists "[when] the combination of references . . . is more desirable, for example because it is . . . cheaper . . . or more efficient."); A POSITA would have recognized that the *Park-Newman/Park-Ording-Newman* mobile devices would have lower power consumption than had *Newman*'s teachings not been used. Wolfe, ¶138.

This modification would have been the result of combining prior art elements (*e.g.*, *Park*'s flexible display and *Newman*'s device's ability to switch from a color display mode to a reduced-color or black and white display mode) according to known methods (*e.g.*, implementing software instructions on *Park*'s device that cause the device to transition from a color display mode to a reduced-color or black and white display mode) to yield predictable results (*e.g.*, reduced power consumption). Wolfe, ¶139.

[1j] “a user interface module configured to respond, when the portable phone is in a locked state, to unlock gestures associated with the unlock image”

Park discloses a flexible touch-sensitive display unit that outputs an image on a screen, and detects user input on the display and delivers the detected user input to a controller. *Park*, ¶123. *Park* discloses that the controller may respond to detected user input by, for example, switching the state of the display. *E.g.*, *Park*, ¶¶5, 125. A POSITA would have understood that *Park*’s hardware and software enabling the disclosed device to display images, detect user input, and respond to the detected user input, correspond to the recited “user interface module.” Wolfe, ¶140.

Park discloses that its portable device may be configured in the recited “locked state.” As discussed, the proper construction of “locked state” is “*a state in which a user is prevented from accessing specific functions or capabilities.*” *Park*’s locked state falls within this construction because, when in the locked state, *Park*’s “portable device cannot provide an application or content to the user through the

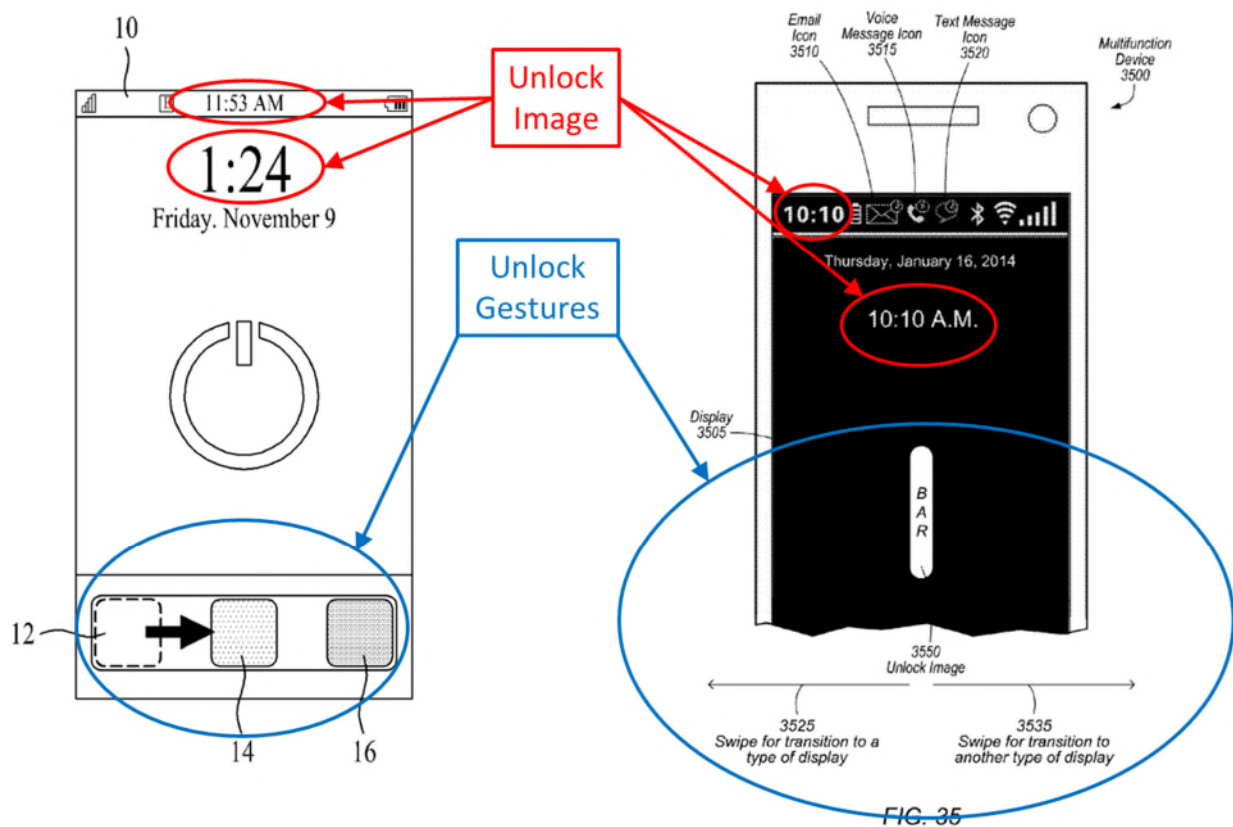
display unit,” but it can respond to unlock gestures entered on an unlock screen.⁶
Park, ¶50; *Wolfe*, ¶141.

Park further discloses that its device responds to what it calls “unlock commands” associated with the “unlock image” displayed when the device is in the recited “locked state.” *Park*, ¶¶63-67. For example, *Park* discloses that, in response to a “second unlock command,” in which a user provides touch input to slide an unlock tab to the right-side of a slide-bar (denoted by “16” in Fig. 2a), the device may switch a first portion of the flexible display to an active state and the second portion to the ready-activate state. *Park*, ¶¶66-67, Fig. 2a. *Park* further discloses that, in response to a “third unlock command,” both first and second portions of the flexible display are switched to the active state. *Park*, ¶64. *Wolfe*, ¶143.

⁶ The claim requires that the recited device can be simultaneously in both “sleep mode” and a “locked state.” Elements [1f]-[1g] recite that when in “sleep mode,” an “unlock image” is displayed. Element [1j] recites that the “user interface module” responds, when in the locked state, to “gestures associated with the unlock image.” A POSITA would understand that the recited gestures could not be “associated with the unlock image” unless the unlock image was displayed, which the claim recites takes place while the phone is in “sleep mode.” This is consistent with the patent’s specification. See ’612 patent, 29:30-30:38; *see also Wolfe*, ¶142.

Each of the aforementioned unlock commands are gestures, because they involve a user touching a display and performing a swiping motion. *Id.*, ¶144. Moreover, *Park*'s "unlock commands" (swiping a slider) are similar to the unlock gestures in the '612 patent (swiping a BAR), which is seen by comparing *Park*'s Fig. 2a to the '612 patent's Fig. 35:

[Fig. 2a]



Wolfe, ¶144. The figures have been annotated to red-circle the unlock images and blue-circle the unlock gestures. As seen, *Park*'s unlock gestures are "associated with the unlock image [i.e., the time graphical indication]" in the same way as those in the '612 patent. *Id.* Accordingly, *Park* discloses this element. *Id.*

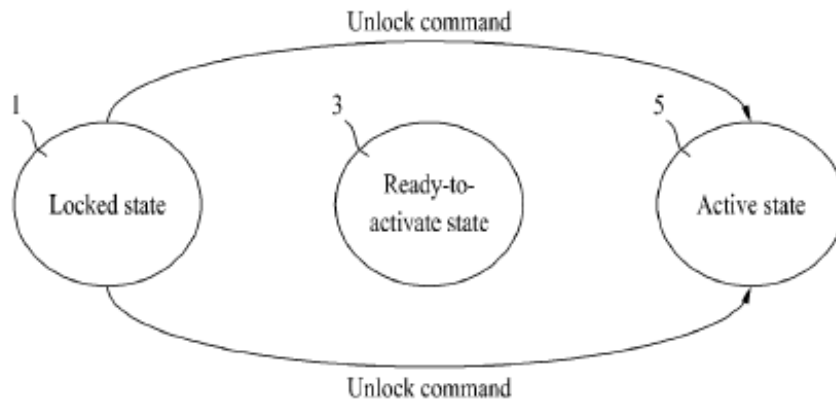
[1k] “wherein a particular unlock gesture of the unlock gestures causes: the phone to transition to an unlocked state, and the display controller to enter the full configuration mode”

This element requires that one of the unlock gestures recited in element [1j] cause the phone to transition to an “unlocked state” and to have the display controller enter the “full configuration mode,” in which substantially all of the display screen is in a powered-on state. *Park* discloses a particular unlock gesture, the “third unlock command,” which is a user touch input detected by the device (*Park*, ¶¶63-65) that causes the device to transition to an unlocked state (*Park*, ¶¶64, 78-79) and both portions of the display to enter the active state (*i.e.*, the recited “full configuration mode”).⁷ Wolfe, ¶145. *Park*’s third unlock command corresponds to the recited “particular unlock gesture.” *Id.*

The process of transitioning to an “unlocked state” and entering “full configuration mode” is illustrated in *Park*’s Fig. 1b:

⁷ This element indicates that the phone can simultaneously be in both “full configuration mode” and an “unlocked state.” Wolfe, ¶145.

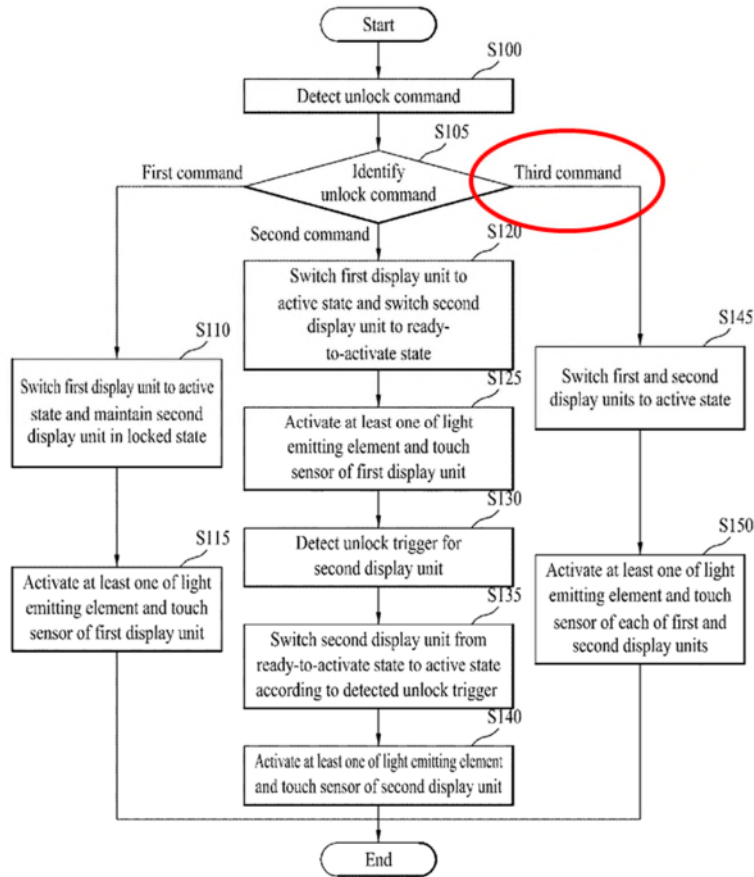
[Fig. 1b]



Park, ¶¶59-60. The upper and lower arrows indicate switching both first and second portions of the display from the locked to the active state in response to an unlock command. *Park*, ¶¶55, 59-60. The result, as discussed regarding element [1e], is a device in a state like that shown in *Park*'s Fig. 4b, where both the first and second portions of its flexible display are in the active state (*i.e.*, with substantially all of the display screen in a powered-on state), thus corresponding to the "full configuration mode." *Park*, ¶¶53, 78-79, Fig. 4b; Wolfe, ¶146.

Park's Fig. 13 is a flowchart that further illustrates the transitioning of a device to an "unlocked state" and entering "full configuration mode" in response to *Park*'s third unlock command:

[Fig. 13]



Park, ¶¶137-145; *Wolfe*, ¶147. At step S100, a device detects an unlock command provided in the form of user touch input (*i.e.*, an unlock gesture). *Park*, ¶137. At step S105, the device identifies the particular unlock command that has been detected. *Park*, ¶137. If the particular unlock command is identified as the “third unlock command (red-circled),” the process proceeds to steps S145 and S150, in which both the first and second portions of the flexible display are switched to *Park*’s active state, which corresponds to the recited “full configuration mode.” *Park*, ¶¶138, 144; *Wolfe*, ¶148. Accordingly, *Park* discloses this element. *Id.*

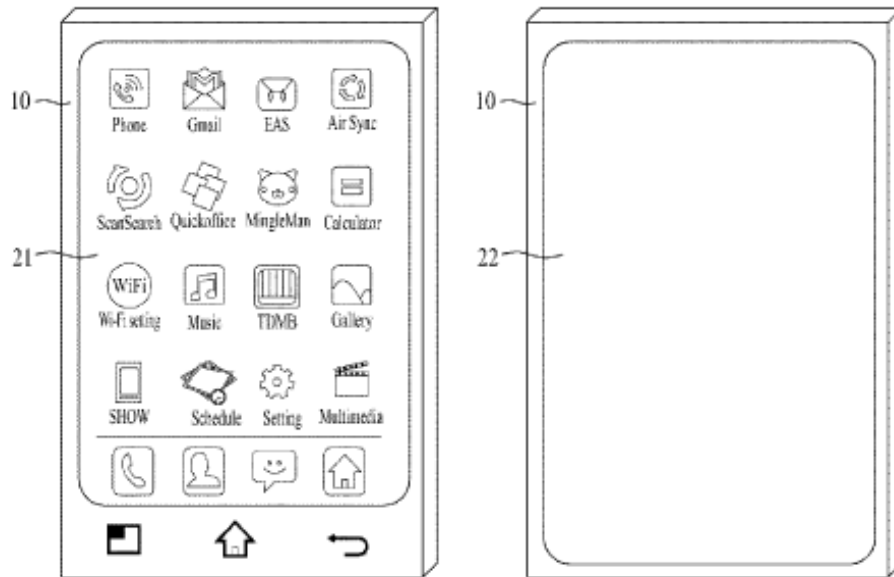
[11] “wherein another particular unlock gesture of the unlock gestures causes: the phone to transition to an unlocked state, and the display controller to enter a proportional configuration mode that puts at least a portion of the display screen in a powered-off state and another portion of the display screen in the powered-on state”

This element requires that one of the unlock gestures recited in element [1j] cause the phone to transition to an “unlocked state” and to have the display controller enter a “proportional configuration mode” in which at least a portion of the display screen is in a powered-off state, and another portion of the display screen is in a powered-on state.⁸ Wolfe, ¶149. *Park* discloses an unlock gesture, called the “second unlock command,” which corresponds to the recited “another particular unlock gesture” because it is different from the “third unlock gesture.”

Park’s second unlock command is a user touch input detected by the device (*Park*, ¶¶63-67), that causes the device to transition to an unlocked state (*Park*, ¶¶67, 75-77) and the display to enter a mode as in Fig. 4a:

⁸ This element indicates that the recited phone can simultaneously be in both the “proportional configuration mode” and an “unlocked state.” Wolfe, ¶149.

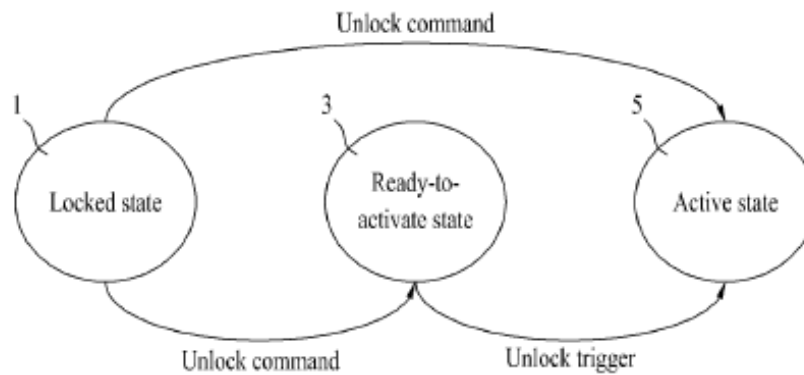
[Fig. 4a]



Wolfe, ¶150. In this mode, first portion 21 of the flexible display is in *Park's* active state while second portion 22 is in *Park's* ready-to-activate state. *Park*, ¶75. *Park* discloses that, in its ready-to-activate state, a portion of the display may be inactive since both the light emitting element and the touch sensor of the portion may be maintained in an inactive state (*i.e.*, powered-off). ¶¶50, 52, 76. Because the configuration illustrated in *Park's* Fig. 4a includes first portion 21 in an active (*i.e.*, powered-on) state and second portion 22 in a ready-to-activate (*i.e.*, powered-off) state, a POSITA would have understood that the configuration illustrated in *Park's* Fig. 4a corresponds to the recited “proportional configuration mode” because “at least a portion of the display screen [is] in a powered-off state and another portion of the display screen in the powered-on state.” Wolfe, ¶151.

The process of transitioning first portion 21 of the display to *Park's* active state and second portion 22 to *Park's* ready-to-activate state is illustrated in *Park's* Fig. 1c:

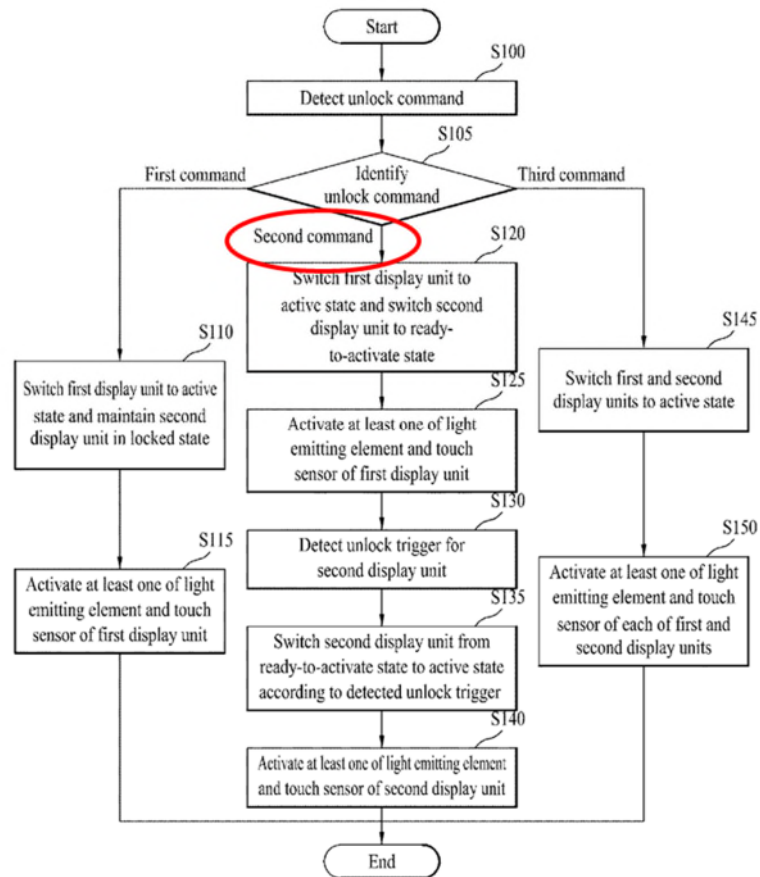
[Fig. 1c]



Park, ¶61. The upper arrow indicates switching the first portion of the display from a locked state to an active state in response to an unlock command, while the lower left-side arrow indicates switching the second portion to the ready-to-activate state in response to the same unlock command. *Park*, ¶¶55, 61; Wolfe, ¶152.

Park's Fig. 13 further illustrates transitioning from “sleep mode” to “proportional configuration mode” in response to *Park's* second unlock command:

[Fig. 13]



Park, ¶¶137-145. At step S100, a device detects an unlock command provided in the form of user touch input (*i.e.*, an unlock gesture). *Park*, ¶137. At step S105, the device identifies the particular unlock command that has been detected. *Park*, ¶138. If the particular unlock command is identified as the “second unlock command (red-circled),” the process proceeds to steps S120 and S125, in which the first portion of the display switches to an active (*i.e.*, powered-on) state while the second portion of the display switches to the ready-to-activate state, such that the display enters a “proportional configuration mode” as claimed. *Park*, ¶140; *Wolfe*, ¶153.

Accordingly, the claim is rendered obvious. Wolfe, ¶155.

2. Claim 2 - “The portable phone of claim 1, wherein when the other portion of the display screen is in the powered-on state, the other portion of the display screen is configured to perform display functions and receive user input”

As an initial matter, a POSITA would have understood that “the other portion of the display screen,” which is recited twice in claim 2, refers back to claim 1’s “another portion of the display screen in the powered-on state,” when the device is in the proportional configuration mode. Wolfe, ¶156.

As discussed regarding element [1e], *Park* discloses that when the first portion of the display is in the “active state” (*i.e.*, powered-on), that portion of the display displays information and also receives user input. *E.g.*, *Park*, ¶¶53 (explaining that “[w]hen the display unit is switched to the active state, the portable device may activate at least one of the light emitting element and the touch sensor of the display unit”), 75 (explaining that when the state of the first portion of the display is switched to an active state, the first portion of the display “may be activated to sense user touch or to display content and execute an application”); Wolfe, ¶157. Accordingly, the claim is obvious. *Id.*

3. Claim 5

[5a] “The portable phone of claim 1, wherein the power management module is further configured to instruct the display controller to function in a full display mode”

As discussed regarding element [1d], *Park* discloses “a power management module configured to manage power consumption of the display.” *Park*, ¶¶63-64, 145. As discussed regarding elements [1c], [1e], and [1k], *Park*’s processor, in conjunction with the controller, instructs the device, upon detection of the third unlock command, to function in a configuration in which both first and second portions of the display are in the active state (*i.e.*, in a full display mode). *Park*, ¶¶53, 64, 78-79, 124-125, Figs. 4b, 10a; Wolfe, ¶158.

[5b] “wherein the full display mode configures substantially all of an available area of the display screen in the powered-on state when the display controller of the portable phone is in the full display mode”

This functionality is illustrated, for example, in *Park*’s Fig. 4b, where both first and second portions of the flexible display are powered-on. *Park*’s first and second portions constitute all of the available area of the flexible display screen. *Park*, ¶¶53, 64, 78-79; Wolfe, ¶159. Accordingly, the claim is obvious. *Id.*

4. Claim 6

[6a] “The portable phone of claim 1, wherein the power management module is further configured to manage the display of the portable phone when the display is in a powered-off mode”

As discussed regarding element [1d], *Park* discloses “a power management module configured to manage power consumption of the display.” *Park*, ¶¶63-64, 145. As discussed regarding elements [1c] and [1f], *Park*’s processor, along with the controller, instructs the device to function in a configuration in which both portions of the display are in a locked state (*e.g.*, “sleep mode”), which is the same as the “powered-off mode” in the context of the ’612 patent (’612 patent, 30:56-57).⁹ *Park*, ¶¶5, 50, 63, 124-125, Fig. 2a; Wolfe, ¶160.

[6b] “the power management module configured to direct the display controller to display at least one of a time, date or an indication of one or more messages while the display controller is in the powered-off mode”

As discussed regarding element [1g], *Park* discloses that the device displays the time when the display is in the locked state. *Park*, ¶63, Fig. 2a; Wolfe, ¶161. Accordingly, the is claim obvious. *Id.*

⁹ Element [6b] requires the display of information while in the “powered-off mode,” which is consistent with the ’612 patent’s disclosure that some power can be provided to the display so that information may be displayed when in the “powered-off mode.” *Park*, ¶50; Wolfe, ¶160.

5. Claim 9

[9a] “The portable phone of claim 1, wherein the display is a touch-sensitive display”

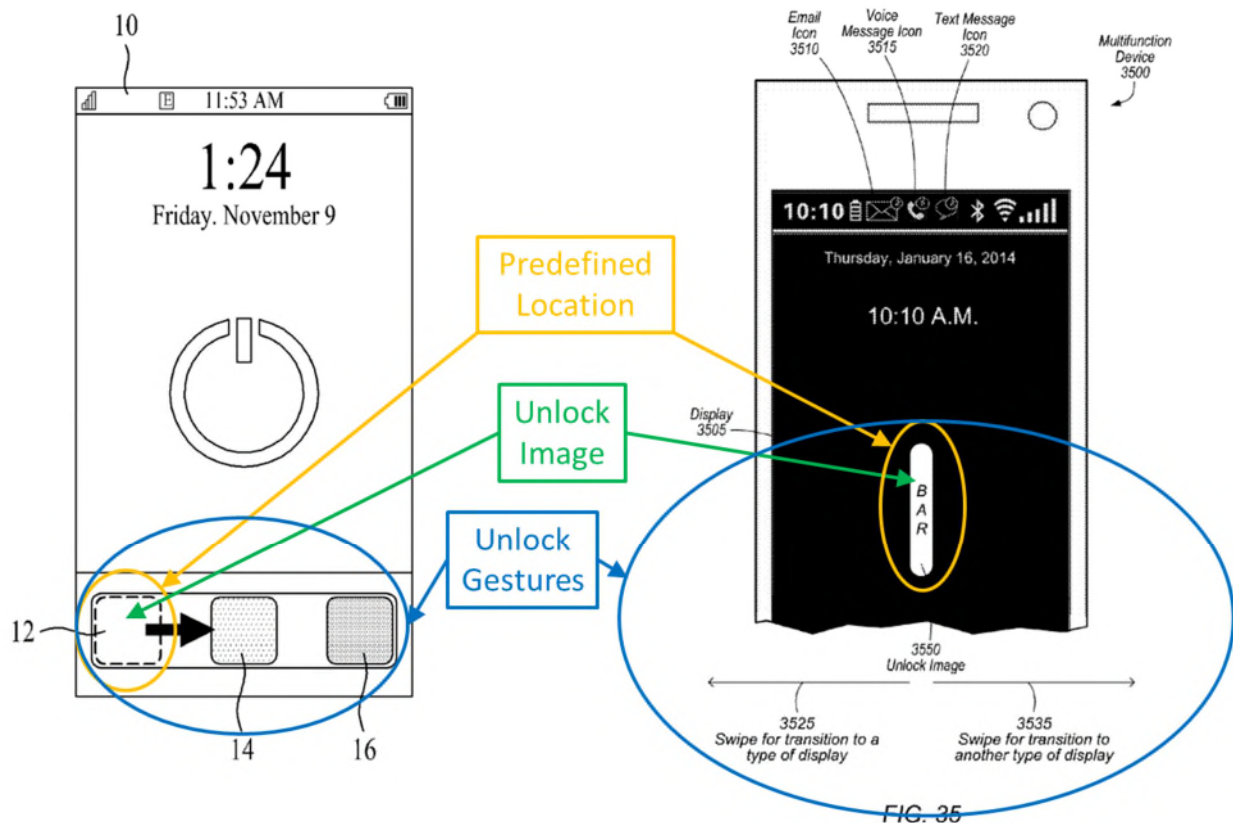
Park discloses a touch-sensitive display. *Park*, ¶123. *Wolfe*, ¶162.

[9b] “and wherein to respond to unlock gestures the user interface module is further configured to: detect a contact with the touch-sensitive display at a first predefined location corresponding to an unlock image”

A POSITA would recognize that the “unlock image” recited in claim 9 is different from the “unlock image” recited in claim 1. First, the “unlock image” recited in claim 9 is introduced using the indefinite article “an,” rather than a definite article, which would have been used if the unlock image of claim 9 is the same as in claim 1. Claim 9 further requires that “contact” with the touchscreen be at a “predefined location corresponding to an unlock image.” A POSITA would understand that this requires the user to touch the “unlock image” recited in claim 9 because it recites that the “predefined location” corresponds to the recited “unlock image.” In contrast, claim 1 recites that its “unlock image” comprise graphical indications, *e.g.*, time, and further recites unlocking a device using gestures “associated” with the unlock image. A POSITA would understand that associating a gesture with an unlock image is distinct from contacting a display at a predefined location “corresponding” to the unlock image. *Wolfe*, ¶163.

Under this interpretation of “unlock image” recited in claim 9, *Park* discloses this element. As discussed regarding element [1j], *Park* discloses “a user interface module.” *Park*, ¶¶66-72, Wolfe, ¶164. *Park* also discloses an unlock gesture where a user first touches “an unlock tab 12 located in a dotted portion in FIG. 2a.” *Park*, ¶66. The dotted portion in Fig. 2a corresponds to the recited “first predefined location corresponding to an unlock image” because that location is the same as that of the unlock tab, which corresponds to the “unlock image” recited in claim 9. Wolfe, ¶164. This is similar to the ’612 patent, as seen by comparing *Park*’s Fig. 2a to the ’612 patent’s Fig. 35:

[Fig. 2a]



Wolfe, ¶¶164-166. Accordingly, *Park* discloses this element. *Id.*

[9c] “continuously move the unlock image on the touch-sensitive display in accordance with movement of the contact while continuous contact with the display screen is maintained as part of the gestures”

As seen in *Park*’s Fig. 2a, when performing an unlock command, a user “move[s]” or “slide[s]” unlock tab 12 “through touch input” to the right, either to the center of the slide-bar (as denoted by “14” in Fig. 2a) or to the right boundary of the slide-bar (as denoted by “16” in Fig. 2a). *Park*, ¶¶66-67, Fig. 2a. A POSITA would have understood that moving/sliding unlock tab 12 along a slide-bar via touch input requires continuous contact with the touch-sensitive display. *See Park*, ¶¶66-67; Wolfe, ¶¶167-168.

[9d] “wherein the unlock image is a graphical, interactive user-interface object with which a user interacts in order to unlock the portable phone”

A POSITA would have understood that *Park*’s unlock tab 12 is a “graphical, interactive user-interface object” since it is displayed. A POSITA would further understand that unlock tab 12 is “interactive” because it moves as the user slides it across the screen. Wolfe, ¶¶169-170. Finally, unlock tab 12 is used to unlock the device. *See e.g., Park*, ¶66. Thus, *Park* discloses this element, and claim 9 is obvious.

6. Claim 10

Claim 10 is nearly identical to claim 1, except that claim 10 is a method claim, and unlike elements [1e] and [1f], which recite that a “display controller” displays graphical indications,¹⁰ corresponding elements [10c] and [10d] correctly recite that the display is the structure displaying graphical indications.¹¹ Regardless, the analysis demonstrating that claim 10 is obvious is the same as in claim 1, and thus claim 10 is obvious for the reasons discussed regarding their corresponding elements. *See* Wolfe, ¶171.

[10p] “A method comprising”

To the extent the preamble is limiting, *Park* discloses this element. *Park* provides a flowchart and accompanying text, which describes a method. *Park*, ¶¶137-145, Fig. 13; Wolfe, ¶172.

¹⁰ *See, e.g.*, [1e]: “...power management module directs a **display controller to display ...**”).

¹¹ *See, e.g.*, [10c]: “...power management module directs **the display to display ...**”).

[10a] “managing a display of a portable phone, wherein managing the display comprises”

Park discloses this element. As discussed regarding claim 1, the method described by *Park* includes steps for managing a display of a portable phone. *Park*, ¶¶137-145, Fig. 13; Wolfe, ¶173.

[10b] “directing, by a power management module, the display”

Park discloses this element. See Section V.B.1.[1d].

[10c] “wherein when the display is not in a sleep mode, the power management module directs the display to display a set of a plurality of graphical indications in color in a full configuration mode that puts substantially all of the display of the portable phone in a powered-on state”

The only substantive difference between element [10c] and [1e] is that [10c] requires that the power management module direct the display (as opposed to a display controller) “to display a set of a plurality of graphical indications in color in a full configuration mode.” As discussed in Section V.B.1.[1e], *Park* discloses that when its device is not in a sleep mode, the power management module directs its display to display a set of a plurality of graphical indications in a full configuration mode that puts substantially all of the display screen in a powered-on state. *Park*, ¶¶50, 53-78-79. Likewise, *Newman* discloses displaying graphical content in color

when not in sleep mode. *Newman*, ¶147. Thus, *Park-Newman* (1A) and *Park-Newman-Ording* (1B) disclose this element. See V.B.1.[1e]; Wolfe, ¶175.

[10d] “when the display is in a sleep mode, directing the display, by the power management module, to display a subset of the plurality of graphical indications”

Park-Newman/Park-Newman-Ording discloses this element. See Section V.B.1.[1f]. As discussed, the only substantive difference between element [10d] and [1f] is that [10d] requires that the power management module direct the display (as opposed to a display controller) “to display a subset of the plurality of graphical indications.” As discussed in Section V.B.1.[1f], when *Park-Newman/Park-Newman-Ording* are in a sleep mode, the power management module directs its display to display a subset of the plurality of graphical indications. See, e.g., *Ording*, 12:8-20, 12:36-63 and Figs. 3-4; *Park*, ¶5, 50, 63 and 66-67 and Fig. 2a; Wolfe, ¶176.

[10e] “the subset comprising an unlock image comprising at least one of, time, date, or an indication of an email, text message, or voice message”

See Section V.B.1.[1g].

[10f] “wherein the subset of the plurality of graphical indications are displayed in a portion of the display”

See Section V.B.1.[1h].

[10g] “are displayed in black, white or grayscale, instead of displayed in color”

See Section V.B.1.[1i].

[10h] “responding, by a user interface module when the portable phone is in a locked state, to unlock gestures associated with the unlock image”

See Section V.B.1.[1j].

[10i] “wherein responding to a particular unlock gesture of the unlock gestures comprises: transitioning the portable phone to an unlocked state, and causing the display to enter the full configuration mode”

See Section V.B.1.[1k].

[10j] “wherein responding to another particular unlock gesture of the unlock gestures comprises: transitioning the portable phone to an unlocked state, and causing the display to enter a proportional configuration mode that puts at least a portion of the display in a powered-on state and another portion of the display in the powered-off state”

See Section V.B.1.[1l]. Note, however, that in element [1l], the recited “at least a portion of the display” is stated to be in the “powered-off state,” whereas in element [10j], the recited “at least a portion of the display” is stated to be in the “powered-on state.” Likewise, in element [1l], the recited “another portion of the display” is stated to be in the “powered-on state,” whereas in element [10j], the recited “another portion of the display” is stated to be in the “powered-off state. This

inconsistent use of terminology does not affect the analysis, which is the same for both elements [11] and [10j]. Wolfe, ¶182.

7. Claim 11

[11a] “The method of claim 10, wherein said responding to the other particular unlock gesture further comprises causing the other portion of the display to not perform display functions”

As an initial matter, a POSITA would have understood that “the other particular unlock gesture” in claim 11 refers back to the recited “another particular unlock gesture” recited in element [10j]. Wolfe, ¶183. Likewise, a POSITA would have understood that “the other portion of the display” in claim 11 refers back to the “another portion of the display,” also recited in element [10j]. As discussed in Section V.B.6.[10j], in claim 10, the “another portion of the display” is powered-off. *Id.*

As discussed regarding element [11], *Park* discloses a device in which the first portion of the display is switched to an active (*i.e.*, powered-on) state and the second portion of the display is switched to a ready-to-activate inactive (*i.e.*, powered-off) state to reduce power consumption. *E.g.*, *Park*, ¶¶140-141, 145; Wolfe, ¶184. *Park* discloses that when the second portion of the display is in the ready-to-activate state, it does not perform display functions. *Park*, ¶52 (“In the ready-to-activate state, the

portable device is in a state before providing an application or content to the user through the display unit, similar to the locked state.”); *see also Park*, ¶76.

[11b] “and not receive user input”

Park discloses that when the second portion of the display is in the ready-to-activate state, it does not receive user input. *Park*, ¶52 (“When the display unit is in the ready-to-activate state, at least one of the light emitting element and **the touch sensor of the display unit is inactive.**”); *see also Park*, ¶76. Thus, *Park-Newman* and *Park-Newman-Ording* render claim 11 obvious. Wolfe, ¶185.

8. Claim 12 - “The method of claim 11, wherein said responding to the particular unlock gesture further comprises causing the portion of the display to perform display functions and receive user input”

See Section V.B.2.

9. Claim 13

[13a] “The method of claim 12, further comprising instructing the display to function in a full configuration mode”

See Section V.B.1.[1e].

[13b] “wherein the full configuration mode configures substantially all of the display in a powered-on state”

See Section V.B.1.[1e].

10. Claims 14-15 and 18

Claims 14-15 and 18 are nearly identical to claims 1-2 and 5 with the difference being that unlike elements [1e] and [1f], which recite a “display controller” that displays graphical indications,¹² corresponding elements [14e] and [14f] more appropriately recite a display that displays graphical indications.¹³ Regardless, the analysis demonstrating that claim 14 is obvious is the same as in claim 1, and thus claim 14 is obvious for the reasons discussed regarding their corresponding claims and elements. *See* Wolfe, ¶189, and:

Claim	Unpatentable as discussed regarding:
14	Claim 1 (Sections V.B.1.[1p]- V.B.1.[1l])
15	Claim 2 (Section V.B.2)
18	Claim 5 (Sections V.B.3.[5a]-V.B.3.[5b])

The only substantive differences between elements [14e]-[14f] and elements [1e]-[1f] is that elements [14e]-[14f] require that the power management module direct the display (as opposed to display controller) to display graphical indications

¹² *See, e.g.*, [1d]: “...power management module directs a **display controller to display ...**”).

¹³ *See, e.g.*, [14e]: “...power management module directs **the display to display ...**”).

in color in a full configuration mode. As discussed in Section V.B.1.[1e], *Park* discloses that when its device is not in a sleep mode, the power management module directs its display to display a set of a plurality of graphical indications in a full configuration mode that puts substantially all of the display screen in a powered-on state. *Park*, ¶¶50, 53-78-79; Wolfe, ¶190. Likewise, as discussed in Section V.B.1.[1f], when *Park-Newman* (Grounds 1A) and *Park-Newman-Ording* (Grounds 1B) are in a sleep mode, the power management module directs its display to display a subset of the plurality of graphical indications. *See, e.g., Ording*, 12:8-20, 12:36-63 and Figs. 3-4; *Park*, ¶¶5, 50, 63 and 66-67 and Fig. 2a; Wolfe, ¶190. Thus, claims 14-15 and 18 are obvious.

C. *Park* in view of *Newman* and *Siwinski* (Grounds 2A) and *Park* in view of *Newman*, *Ording* and *Siwinski* (Grounds 2B) Renders Claims 3-4 and 16-17 Obvious

1. Claim 3 - “The portable phone of claim 2, wherein the powered-on state configures the other portion of the display screen to function in a grayscale color mode”

As discussed, a POSITA would have understood that “the other portion of the display screen” in claims 2-3 refers to “another portion of the display screen in the powered-on state” recited in claim 1, when the device is in the proportional configuration mode. Wolfe, ¶191.

As discussed regarding element [11], *Park* discloses a device in which the first portion of the display is switched to an active (*i.e.*, powered-on) state while the

second portion of the display is switched to a ready-to-activate (*i.e.*, powered-off) state to reduce power consumption. *E.g.*, *Park*, ¶¶140, 145; *Wolfe*, ¶192.

Park does not expressly state that the first portion of the display functions in a grayscale color mode in this reduced-power configuration. *Newman*, however, discloses that, when operating in a low power mode (called second mode), a “display may be configured such that it uses less power (e.g. by reducing the colour and/or brightness, and/or changing the colour scheme of the display).” *Newman*, ¶94. *Newman* also discloses that, in low power mode (second mode), information may be displayed “in black and white.” *Newman*, ¶147. A POSITA would have understood that any standard color mobile display screen such as OLED screens used by *Park* and *Newman* could display black, white and grayscale images, in addition to images having other colors. *Wolfe*, ¶193.

To the extent Dareltech asserts that POSITAs would not find it obvious to use grayscale color mode in *Park-Newman/Park-Newman-Ording*, *Siwinski* discloses an OLED display that can switch to a grayscale mode to reduce power consumption. *E.g.*, *Siwinski*, 3:43-50, *see also* 2:15-22.

It would have been obvious to a POSITA to combine *Siwinski*’s teachings regarding use of grayscale color mode for reducing power consumption into the *Park-Newman/Park-Newman-Ording* device such that the graphical indications shown in *Park* were displayed in a grayscale color mode. *Wolfe*, ¶¶194-195. Like

Park, *Siwinski* relates primarily to preventing unnecessary power consumption in battery-powered devices. *Siwinski*, 1:23-26. *Siwinski* teaches how to construct OLED displays so that grayscale color mode significantly reduces power consumption (*Id.*, 3:43-50). Given *Park*'s and *Newman*'s teachings regarding the desirability of reducing power consumption, a POSITA would have been motivated to adapt an OLED screen like that *Siwinski* for use in *Park-Newman/Park-Newman-Ording*. Wolfe, ¶195.

A POSITA would have been motivated to use *Siwinski*'s teachings to enable *Park-Newman/Park-Newman-Ording* devices to switch from a color display mode to a grayscale display mode. Indeed, it was well-known to POSITAs that grayscale color mode could be used to reduce power consumption in battery-powered devices. *See e.g., Saba*, filed 5/19/2011 (Ex. 1038), ¶26 ("Other actions may reduce the power consumption of the display. For instance, the display may be dimmed or the **image presented on the display may be converted from color to grayscale.**"). Thus, a POSITA would have been motivated to use *Siwinski* with *Park-Newman/Park-Newman-Ording* since reducing power consumption in battery-powered devices is highly desirable. *DyStar*, 464 F.3d at 1368; Wolfe, ¶196. Thus, a POSITA would have looked to teachings like those in *Siwinski*.

This modification would have been the result of combining prior art elements (*e.g., Park*'s portable phone and *Siwinski*'s screen having a low-power grayscale

mode) according to known methods (*e.g.*, including a white LED in each pixel and implementing software instructions on *Park*'s device to take advantage of *Siwinski*'s low-power grayscale mode) to yield predictable results (*e.g.*, reduced power consumption). Wolfe, ¶197.

2. Claim 4

[4a] “The portable phone of claim 3, wherein the powered-off state configures the portion of the of the display screen to not perform display functions”

As an initial matter, a POSITA would have understood that “the portion of the of the [sic] display screen” in claim 4 refers back to the recited “portion of the display screen in a powered-off state” recited in claim 1, when the device is in the proportional configuration mode. Wolfe, ¶198.

As discussed regarding element [11], *Park* discloses a device in which the first portion of the display is switched to an active (*i.e.*, powered-on) state and the second portion of the display is switched to a ready-to-activate (*i.e.*, powered-off) state to reduce power consumption. *E.g.*, *Park*, ¶¶138-139, 145. *Park* discloses that when the second portion of the display is in the ready-to-activate state, it does not perform display functions. *Park*, ¶52 (“In the ready-to-activate state, the portable device is in a state before providing an application or content to the user through the display unit, similar to the locked state.”); *see also Park*, ¶76. Wolfe, ¶199.

[4b] “and to not receive user input”

Park discloses that when the second portion of the display is in the ready-to-activate state, it does not receive user input. *Park*, ¶52 (“When the display unit is in the ready-to-activate state, at least one of the light emitting element and **the touch sensor of the display unit is inactive.**”); *see also Park*, ¶76. Thus, *Park-Newman-Siwinski* and *Park-Newman-Ording-Siwinski* render claim 4 obvious. Wolfe, ¶200.

3. Claim 16 - “The portable phone of claim 15, wherein the locked state of the portable phone configures the display to function in a grayscale color mode”

Claim 16 is similar to claim 3, except that claim 16 requires that the display function in a grayscale color mode when the device is in the locked state. As discussed regarding claim 3, *Newman* discloses switching to a reduced-color or black and white mode to reduce power consumption, while *Siwinski* discloses an OLED display that can switch to grayscale mode to reduce power consumption.. *Newman*, ¶¶94, 147 *Siwinski*, 3:43-50. It would have been obvious to a POSITA to combine *Siwinski*’s teachings into the *Park-Newman/Park-Newman-Ording* device, such that the locked state of the *Park* device functioned in a grayscale color mode to reduce power consumption, for the same reasons discussed regarding claim 3, which renders the claim obvious. Wolfe, ¶201.

4. Claim 17

[17a] “The portable phone of claim 16, wherein the powered-off state of the proportional configuration mode configures the other portion of the display to not perform display functions”

See claims 14-16 and element 4[a]. Wolfe, ¶202.

[17b] “and to not receive user input”

See element 4[b]. This claim is thus obvious for the same reasons as claim 4. Wolfe, ¶203.

D. *Park* in view of *Newman* and *Yang* (Grounds 3A) and *Park* in view of *Newman*, *Ording* and *Yang* (Grounds 3B) Render Claims 7-8, and 19 Obvious

1. Claim 7

[7a] “The portable phone of claim 1, wherein the power management module is further configured to direct the display controller to transition between modes based on a configurable battery power threshold”

Park discloses that its device may be battery-powered. *Park*, ¶124. *Park* does not state that the display described therein transitions between modes based on a configurable battery power threshold. *Yang*, however, discloses a “mobile telephone” that switches between an “original screen mode (OSM),” analogous to the claimed “full configuration mode,” and an “adjusted screen mode (ASM),” analogous to the claimed “proportional configuration mode.” *Yang*, ¶¶20-21; Wolfe, ¶205. *Yang* discloses that the purpose of switching to the adjusted screen mode is to

reduce power consumption. *E.g., Id.*, Abstract, ¶¶18, 29. *Yang* further discloses that the device may switch between modes based on a battery-power threshold. *Id.*, ¶¶33, 90. Wolfe, ¶205. *Yang* also discloses that its battery-power threshold is configurable, just as claimed. *Yang*, ¶33; Wolfe, ¶206.

A POSITA would have found it obvious to incorporate *Yang*'s battery-power threshold into the *Park-Newman/Park-Newman-Ording* device such that *Park*'s switching of display modes could have been performed based on a configurable battery power threshold, as required by this element. Like *Park*, *Yang* is (i) directed to reducing power consumption in a portable device, and discloses a device configured to operate in multiple display modes to reduce power consumption (*Yang*, Abstract, ¶¶18, 29), and (ii) discloses that a device may switch between display modes in response to user commands (*Yang*, ¶32). *Yang* further discloses that the device may automatically switch to a reduced-power display mode upon detecting that a battery power of the device is less than a configurable battery power threshold. *Yang*, ¶¶33, 90. Wolfe, ¶207.

A POSITA would have been motivated to use *Yang*'s teachings to enable the *Park* device to switch to a reduced-power display mode upon detecting that battery power of the device is less than a configurable battery power threshold because such a feature would further reduce power consumption. In particular, *Yang*'s teachings are complementary with those in *Park*. They can work together without any

substantial modifications or experimentation. Wolfe, ¶208. They each provide improvements to power consumption and thus a POSITA would naturally be motivated to use them together (and indeed, the teachings do not interfere with each other in such a way that would preclude use of both). *Id.* Finally, as of the effective filing date, use of multiple different power-savings technologies in portable devices was commonplace. *Id.*

Modifying *Park* to include *Yang*'s teachings would have been the result of combining prior art elements (*e.g.*, *Park*'s portable phone display, which operates in both normal and power-saving modes, and *Yang*'s device's ability to switch to a reduced-power display mode upon detecting that a battery power of the device is less than a configurable battery power threshold) according to known methods (*e.g.*, implementing software instructions on *Park*'s device that cause the device to switch display modes in response to a detected battery power level) to yield predictable results (*e.g.*, reduced power consumption). *Yang*, ¶¶33, 90; Wolfe, ¶209.

[7b] “wherein the power management module is further configured to: determine that a battery power of the portable phone reaches the configurable battery power threshold”

Yang discloses that the battery power of the device must be “detect[ed],” and that it must be compared to the battery power threshold to determine whether the battery power “reaches a capacity that is at or below a certain percentage of total

battery capacity” or “is less than a battery power threshold.” *Yang*, ¶¶33, 90; Wolfe, ¶210.

[7c] “subsequent to said determine, instruct the display controller to change from a full configuration mode to the proportional configuration mode”

Yang discloses that upon detecting that the battery power of the device is less than a battery power threshold, the device automatically changes from OSM (*i.e.*, full configuration mode) to ASM (*i.e.*, proportional configuration mode). *Yang*, ¶¶33, 90; Wolfe, ¶211. Thus, claim 7 is obvious. *Id.*

2. Claim 8 - “The portable phone of claim 7, wherein the configurable battery power threshold is a configurable setting in a user interface of the portable phone”

As discussed regarding claim 7, *Yang* discloses a configurable battery power threshold. *Yang*, ¶33 (disclosing that the threshold may be “preconfigured by the user” or may be “a value designated by the user”). *Yang* discloses a user interface that allows a user to configure settings of the device described therein. *Yang*, ¶¶83-84. Configuring portable phone settings via a user interface was well-known long before the ’612 patent was filed, and a POSITA would have understood that such a user interface would have been used to allow a user to configure the battery power threshold in the device disclosed by *Yang*. *See Yang* ¶1 (“a user typically interacts with the portable electronic device through an interface displayed on the display screen”); Wolfe, ¶212. Thus, claim 8 is obvious. *Id.*

3. Claim 19

[19a] “The portable phone of claim 14 wherein the power management module is further configured to direct the display to change between modes based on a configurable battery power threshold”

See element 7[a].

[19b] “wherein the power management module is further configured to: determine that a battery power of the portable phone has reached the configurable battery power threshold”

See element 7[b].

[19c] “subsequent to said determination, instruct the display to shift from the full configuration mode to the proportional configuration mode”

See element 7[c]. This claim is obvious. Wolfe, ¶¶213-215.

VI. Mandatory Notices Under 37 C.F.R. § 42.8

A. Real Party-in-Interest

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. are the real party in interest for this petition.

B. Related Matters

Samsung is concurrently requesting *inter partes* review of U.S. Patent No. 8,593,427 in IPR2019-01529, and U.S. Patent No. 8,717,328 in IPR2019-01528. U.S. Patent No. 8,717,328 is a continuation of the U.S. Patent No. 8,593,427. U.S.

Patent No. 9,075,612 is a continuation-in-part of U.S. Patent No. 8,717,328 and is thus in the same family as U.S. Patent No. 8,717,328 and U.S. Patent No. 8,593,427.

To the best knowledge of Samsung, the '612 patent is or has been involved in the following district court litigations:

Name	No.	Court	Filed
<i>Dareltech LLC v. Samsung Elecs. Co., Ltd. And Samsung Electronics America, Inc.</i>	4:18-cv-00702	E.D.Tex	Oct. 4, 2018

To the best knowledge of Samsung, the '612 patent has not been challenged in any *inter partes* review prior to this proceeding.

U.S. Patent No. 8,593,427 issued on November 26, 2013. U.S. Patent No. 8,717,328 issued on May 6, 2014. U.S. Patent No. 9,360,923 issued on June 7, 2016. U.S. Patent Application Serial No. 16/002,854, filed on June 7, 2018, seeks a broadening reissue of U.S. Patent No. 9,360,923. Each of these patents and applications is a parent to the '612 patent.

C. Lead and Backup Counsel

Lead Counsel	Back-Up Counsel
Jeffrey A. Miller (Reg. No. 35,287) jmillertab@apks.com Arnold & Porter Kaye Scholer LLP 5 Palo Alto Square, Suite 500 3000 El Camino Real Palo Alto, CA 94306	Jennifer A. Sklenar* (Reg. No. 40,205) Jennifer.Sklenar@arnoldporter.com Arnold & Porter Kaye Scholer LLP 601 Massachusetts Ave., NW Washington, DC 20001-3743 Tel: 202-942-5000

Lead Counsel	Back-Up Counsel
Tel: 650-319-4519	*Admitted in NY and CA only; practice limited to matters before federal courts and federal agencies

D. Service Information

Please address all correspondence to lead and back-up counsel at the addresses shown above. Samsung consents to electronic service by e-mail.

Date: September 5, 2019

Respectfully submitted,

/Jeffrey A. Miller/
Jeffrey A. Miller, Lead Counsel
Reg. No. 35,287

CERTIFICATE OF COMPLIANCE

The undersigned hereby certifies that the foregoing Petition for Inter Partes Review contains 13,995 words, excluding those portions identified in 37 C.F.R. § 42.24(a), as measured by the word-processing system used to prepare this paper.

/Jeffrey A. Miller/
Jeffrey A. Miller

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing Petition for *Inter Partes* Review, the associated Power of Attorney, and Exhibits 1001-1037 are being served on September 5, 2019, by Federal Express at the following address of record for the subject patent:

MICHAEL BEST & FRIEDRICH LLP (AUS)
100 E WISCONSIN AVENUE
Suite 3300
MILWAUKEE WI 53202

Courtesy copies of the same documents were served on September 5, 2019, by Federal Express at the following address of record for litigation counsel:

David Hecht
PIERCE BAINBRIDGE BECK PRICE & HECHT LLP
20 West 23rd St Fifth Floor
New York, New York 10010

/Shantell Gutrick/
Shantell Gutrick
Litigation Legal Assistant

ARNOLD & PORTER KAYE SCHOLER,
L.L.P.