UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD., and
SAMSUNG ELECTRONICS AMERICA, INC.,

Petitioners

v.

HERMES IP MANAGEMENT LLC,

Patent Owner

Case IPR2025-00872

U.S. Patent No. 8,855,720

Declaration Of Dr. Clifton Forlines
In Support Of Petition For *Inter Partes* Review
of U.S. Patent No. 8,855,720

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I, Clifton Forlines, Ph.D., declare as follows:

I. INTRODUCTION

1. I have been retained by the Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively "Petitioners" or "Samsung") as an independent expert consultant in this proceeding before the United States Patent and Trademark Office ("PTO").

2. I am being compensated at a rate of $600/hour for my services in this proceeding, which is my regular and customary rate.

3. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony or this declaration, or the outcome of this or any other proceeding. I have no other interest in this proceeding.

4. I have been asked to consider whether certain references disclose and/or suggest the features recited in claims 1-16 of U.S. Patent No. 8,855,720 ("the '720 Patent") (Ex. 1001).[1] My opinions are set forth below.

II. BACKGROUND AND QUALIFICATIONS

5. My *curriculum vitae* (Ex. 1003), includes my detailed education and employment background, my professional experience, and a list of my publications.

[1] Where appropriate, I refer to exhibits which I understand will be attached to the petition for *inter partes* review of the '720 Patent (the "Petition").

A summary of my relevant experience and expertise is provided below. Also included in my CV are past instances where I have served as an expert witness, including for subject matter relating to mobile devices and graphical user interfaces. To the best of my knowledge, no court or other judicial body has ever excluded or prohibited me from providing testimony as an expert witness.

6. I currently hold two faculty appointments, a 75% appointment as an Assistant Professor in the Department of Computer Science at the University of Toronto, and a 25% appointment as an Associate Research Professor at Khoury College and Roux Institute, Northeastern University. My work relates to the field of Human-Computer Interaction.

7. I graduated from Carnegie Mellon University with an undergraduate major in Industrial Design and with an additional major in Human-Computer Interaction ("HCI") in the spring of 1999. Immediately upon graduation, I was hired by CMU's Human-Computer Interaction Institute, where I worked as a Research Associate in the Stage3 Research Lab, a group focused on Virtual Reality research and novel interface design. While employed at the university, I completed both a Masters in Human-Computer Interaction and a Masters of Entertainment Technology, receiving these two graduate degrees in 2001.

8. The focus of my master's thesis was on the design and development of a flashcard study application for Texas Instruments ("TI") graphing calculators,

referred to as StudyCards. The development of StudyCards included user interface design that covered the graphical facets of the application, the physical key controls, and the linking of the two. StudyCards has been shipped with over 20 million TI graphing calculators in the time since, and is still included on every TI-83/84 calculator sold.

9. After graduation with my masters degrees from CMU in 2001, I began working at the Mitsubishi Electric Research Laboratory (MERL) first as a HCI contractor, then as a Research Associate, and finally as a Research Scientist. While at MERL, I performed user interface research on cell phones, investigating novel interfaces for games and text entry using the phone's key-limited keypad. Other early research at MERL included the design and testing of Rapid Serial Presentation Interfaces—so-called Carousel interfaces that presented series of images in a rotating manner.

10. Another area of my research at MERL centered on television user interfaces and the interaction between the on-screen display and remote-control user interface ("UI"). This work included text entry for Mitsubishi Televisions using the key-limited remote control, as well as display navigation techniques using the remote control. The majority of my work at MERL centered on the DiamondTouch multi-touch tabletop, a multi-touch touch-screen device that predated multi-touch cell phones. This work included navigation and interaction on the tabletop itself, as

well as mixed-device interaction using tabletops, laptops, and phones such as the Nokia N95.

11. While at MERL, I actively participated in the academic research community, publishing and reviewing papers in a number of Association of Computing Machinery ("ACM") and Institute of Electrical and Electronics Engineering ("IEEE") user interface conferences and journals. I accepted positions on the organization and program committees for several of these conferences. Over my career, I have reviewed hundreds of published and unpublished papers on user interfaces, including many on mobile systems. Google Scholar lists nearly 10,000 citations to my dozens of published papers. At MERL, I authored dozens of patents in the fields of user interface and input systems.

12. In 2008, I completed my Ph.D. in Computer Science in the Dynamic Graphics Project ("DGP") at the University of Toronto. DGP is the Human-Computer Interaction Laboratory in the Department of Computer Science.

13. In 2010, I left MERL to work at Draper Laboratory in Cambridge, MA. Draper Labs began as the Massachusetts Institute of Technology's Aeronautics Instrumentation Lab, although it is now a not-for-profit lab that focuses on national security, space exploration, health care, and energy. I was hired as a Senior Software Engineer in the Human-Centered Engineering Group at Draper. I was promoted to Principal Software Engineer and then to Group Leader, effectively running Draper's

human-computer interaction efforts. I led the design and development of a mobile interface for Air Force Special Forces. This mobile interface was rooted in commercially available mobile interfaces. Other projects I was involved with at Draper included the development of compact electrical devices, for which I ran the embedded and user interface software development teams and collaborated closely with the project's electrical and mechanical engineers.

14. I left Draper in 2013 to work full-time at a company I founded, Tactual Labs. At Tactual Labs, I worked on hardware and software efforts to enable fast and responsive touchscreen and stylus user interfaces—as well as human body sensing—for mobile devices, automotive applications, and other consumer electronics. As the company's CTO, I managed dozens of engineers working on software and hardware development and the integration of the two. Tactual's initial focus was on improving the latency of touch-input on the Android mobile operating system and on improving its input stack. This work included modifications to the Android operating system, including changes in touch sensing, input event routing, and display timing.

15. In the winter of 2021, I received an appointment in the Khoury School of Computer Science at Northeastern University, where I worked as an Associate Research Professor at the Roux Institute in Portland, Maine. In this role, I frequently reviewed academic manuscripts, advised students, and collaborated with university partner organizations in industry and government as well as with other members of

the Northeastern University research community, including those in the fields of mechanical and electrical engineering.

16. In the summer of 2024, I reduced my appointment at Northeastern to part time and took an appointment at the University of Toronto in their Department of Computer Science at the rank of Assistant Professor. In this role, I provide leadership and manage the newly established Partnership Office within the Department of Computer Science, strengthen and cultivate existing and new industrial relations in Canada and internationally, connect CS faculty members with industry partners to foster new collaborations, and identify and pursue funding opportunities to support research endeavors with a focus on private sector funding and working with the CS Research Grants and Awards Coordinator.

17. Over the course of my career, I have authored numerous patent applications and am a named inventor on 61 issued U.S. patents in addition to many international equivalents. These patents describe software and hardware inventions in the fields of user interface design, computer input and output devices, RF sensing, and consumer electronics.

III. MATERIALS REVIEWED AND CONSIDERED

18. The opinions contained in this declaration are based on the documents I reviewed, my professional judgment, as well as my education, experience, and

knowledge regarding the field of operating system and/or user interface design, including for mobile computing devices.

19. In performing my analysis and preparing this declaration, I reviewed the following materials:

- U.S. Patent 8,855,720 ("*'720Pat*") (Ex. 1001);
- File History of U.S. Patent 8,855,720 ("*'720FH*") (Ex. 1004);
- U.S. Patent No. 7,231,229 ("*Hawkins*") (Ex. 1005);
- U.S. Patent App. Pub. 2006/0236266 ("*Majava*") (Ex. 1006);
- U.S. Patent App. Pub. 2007/0094596 ("*Nielsen*") (Ex. 1007);
- U.S. Patent App. Pub. 2006/0030371 ("*Tanaka*") (Ex. 1008);
- U.S. Patent App. Pub. 2006/0030370 ("*Wardimon*") (Ex. 1009);
- U.S. Patent App. Pub. 2007/0257097 ("*Nurmela*") (Ex. 1010);
- U.S. Patent App. Pub. No. 2006/0290661 ("*Innanen*") (Ex. 1011);
- Excerpts from MICROSOFT COMPUTER DICTIONARY (5th ed. 2002) ("*Computer Dictionary*") (Ex. 1012);
- U.S. Patent No. 6,516,202 ("*Hawkins '202 Patent*") (Ex. 1013);
- Excerpts from File History the '720 Patent's Parent Application No. 11/911,277 ("*'277FH*") (Ex. 1014);

- Patent Owner's Infringement Contentions for the '720 Patent, in *Hermes IP Management LLC v. Samsung Electronics Co., Ltd. et al.*, No. 2:24-CV-00540-JRG (E.D. Tex.) (Ex. 1015);

and any other materials I refer to in this declaration in support of my opinions.

20. All of the opinions contained in this declaration are based on the documents I reviewed and my knowledge and professional judgment. My opinions have also been guided by my appreciation of how a person of ordinary skill in the art would have understood the claims and the specification of the '720 Patent at the time of the alleged invention, which I have been asked to consider as early as June 15, 2006. My opinions reflect how one of ordinary skill in the art would have understood the '720 Patent, the prior art to the patent, and the state of the art at the time of the alleged invention.

21. It is my opinion that certain references disclose and/or suggest all of the features recited in claims 1-16 ("Challenged Claims") of the '720 Patent, as I discuss in detail below.

22. I reserve the right to amend or supplement the opinions provided in this declaration based on further arguments or evidence introduced during the proceedings.

IV. LEVEL OF ORDINARY SKILL IN THE ART

23. I have been informed and understand that, in the context of an invalidity analysis, a person having ordinary skill in the art is a hypothetical person who looks to prior art at the time of the invention. I further understand that the factors that may be considered in determining the level of ordinary still include: (1) the problems encountered in the art; (2) the prior art solutions to the problems encountered in the art; (3) the rapidity of innovation; (4) the sophistication of the technology; and (5) the education level of individuals actively working in the field. I understand that these factors need not all be considered for the analysis and that one or more of these factors may control.

24. I was asked to provide my opinion on the level of one of ordinary skill in the art with respect to the alleged invention of the '720 Patent by June 15, 2006. Based on my consideration of the factors above, I believe a person of ordinary skill in the art would have had a Bachelor of Science (or equivalent) in computer science, computer engineering, electrical engineering, or industrial engineering (or a similar academic field), and approximately two years of experience in the field of operating system and/or user interface design for mobile computing devices. A greater amount of education could compensate for less work experience, and vice versa.

25. In view of my experience and qualifications noted above, I met, and in fact exceeded, the qualifications of a person of ordinary skill in the art. To be clear,

all of my opinions in this declaration are from the perspective of one of ordinary skill in the art as I have defined it here during the relevant timeframe.

V. RELEVANT LEGAL STANDARDS

26. I am not an attorney and I do not offer legal opinions, but in the course of my work, I have had experience studying and analyzing patents and patent claims from the perspective of a person skilled in the art.

27. For the purposes of this declaration, I have been informed about certain aspects of the law that are relevant to forming my opinions. My understanding of the law is as follows:

28. Petitioners' counsel has informed me that for the prior art to inherently disclose a claimed limitation, the prior art need not expressly disclose the limitation, so long as the claimed limitation necessarily flows from a disclosure in the prior art. I also understand that it is acceptable to examine evidence outside the prior art reference (extrinsic evidence) in determining whether a feature, while not expressly discussed in the reference, is necessarily present in that reference.

29. Petitioners' counsel has informed me that a patent claim can be considered to have been obvious to a person of ordinary skill in the art at the time the application was filed. I am informed that this means that, even if all of the requirements of a claim are not found in a single prior art reference, the claim is not patentable if the differences between the subject matter in the prior art and the

subject matter in the claim would have been obvious to a person of ordinary skill in the art at the time of the invention.

30. I have been informed by Petitioners' counsel that a determination of whether a claim would have been obvious should be based upon several factors, including, among others:

- the level of ordinary skill in the art at the time the application was filed;
- the scope and content of the prior art; and
- what differences, if any, existed between the claimed invention and the prior art; and
- any "secondary indicia" of non-obviousness, if they are of record.

31. I have been informed by Petitioners' counsel that a single reference can render a patent claim obvious if any differences between that reference and the claims would have been obvious to a person of ordinary skill in the art. Alternatively, I understand that the teachings of two or more references may be combined in the same way as disclosed in the claims, if such a combination would have been obvious to a person of ordinary skill in the art. I understand that in determining whether a combination based on either a single reference or multiple references would have been obvious, it is appropriate to consider, among other factors:

- whether the teachings of the prior art references disclose known concepts combined in familiar ways, and when combined, would yield predictable results;
- whether a person of ordinary skill in the art could implement a predictable variation, and would see the benefit of doing so;
- whether the claimed elements represent one of a limited number of known design choices, and would have a reasonable expectation of success by those skilled in the art;
- whether a person of ordinary skill would have recognized a reason to combine known elements in the manner described in the claim;
- whether there is some teaching or suggestion in the prior art to make the modification or combination of elements claimed in the patent; and
- whether the innovation applies a known technique that had been used to improve a similar device or method in a similar way.

32. I understand that "secondary indicia" of non-obviousness may include certain objective factors, such as: commercial success of products practicing the claimed invention; long-felt but unsolved need; teaching away; unexpected results; copying; and praise by others in the field. These factors are generally referred to as "secondary considerations" or "objective indicia" of non-obviousness. I understand, however, that for such objective evidence to be relevant to the non-obviousness of a

claim, there must be a causal relationship (called a "nexus") between the claim and the evidence and that this nexus must be based on a novel element of the claim rather than something in the prior art. I also understand that even when they are present, secondary considerations may be unable to overcome primary evidence of obviousness (such as motivation to combine with predictable results) that is sufficiently strong.

33. I have been informed by Petitioners' counsel that a person of ordinary skill in the art has ordinary creativity and is not an automaton. Petitioners' counsel has also informed me that in considering obviousness, obviousness may not be determined using the benefit of hindsight, including hindsight derived from the patent being considered.

VI. SUMMARY OF OPINIONS

34. For the reasons I discuss below, in my opinion claims 1-16 of the '720 Patent are rendered obvious by the prior art.

VII. OVERVIEW OF THE '720 PATENT

A. Specification

35. The '720 Patent is titled "Method And Apparatus For Providing A Plurality Of Screens In Idle State Of Mobile Terminal," and generally relates to "providing a plurality of screens in an idle state of a mobile terminal" (*e.g.*, a mobile phone or smartphone). Ex. 1001 (*'720Pat*), Abstract.

36. The ’720 Patent discuses that “mobile communication terminals” can include a “colorful graphic environment on the ***idle screen***,” which is described as “a starting point for using various applications provided by mobile” devices.[2] *Id.*, 1:63-67. The ’720 Patent further explains that the user can “decorate the idle screen with his favorite photo, image, or animation and express his own personality.” *Id.*, 1:66-2:3. Another feature is the ability to set up the “idle screen” with “frequently-used application[s]” that can be “directly run,” but “without complicated steps of operation.” *Id.*, 1:12-20. Another feature is the use of graphical “shortcut icons” on the display, whereby when “the user selects a specific icon on the shortcut icon screen, a corresponding application is driven.” *Id.*, 4:44-55. The ’720 Patent acknowledges that such “shortcut icons” provide “a function similar to that of shortcut icons on the base screen of conventional computers.” *Id.*

37. The ’720 Patent also describes three purported “problems” in “setting up the idle screen.” *Id.*, 2:21-34. The first purported problem is that “once an application is used for the idle screen, it is impossible to present another application on the same idle screen.” *Id.*, 2:23-25. The second purported problem is that “when another application is to be used for the idle screen, tree-structured menu items must be searched through a number of steps, which renders it inconvenient to modify the

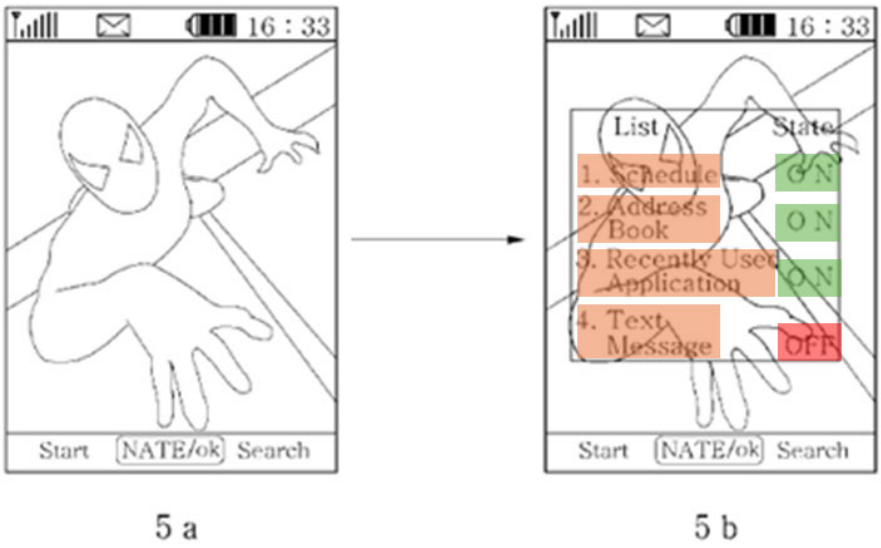
[2] All **bold**/*italics*/color emphases and annotations are mine, unless noted otherwise.

idle screen." *Id.*, 2:26-29. The third purported problem is that "although basic applications (e.g. address book, text message) may be given shortcuts on the key input module for direct access, the limited number of key buttons on the terminal makes it impossible to assign shortcuts to all of the ever-increasing applications." *Id.*, 2:30-34.

38. The '720 Patent aims to solve these alleged problems with a so-called "spin-home function for a mobile communication terminal." *Id.*, 2:38-3:25. Figs. 1-5. In one aspect, the '720 Patent describes that an "***application***" may be "designated as the spin-home," such that the designated "application" is "displayed on the LCD display module every time the user operates a specific key." *Id.* Similarly, another "application" may be "designated as the spin-home," such that the second application is displayed "every time the user operates a second key button for circulating the idle screen." *Id.* The '720 Patent further describes that "the user" may operate "a confirmation key button" to set "an application currently displayed on the LCD display module as the idle screen." *Id.* The '720 Patent further describes that other content may be displayed as the "idle screen," including "frequently used contact addresses," a "list of contact addresses having shortcuts assigned thereto," a "list of recently used application[s]," and a "shortcut icon screen." *Id.*, 4:64-5:2.

39. The '720 Patent further describes a "screen setup program," for "application items, which have been designated as the spin-home." *Id.*, 7:49-56, Fig.

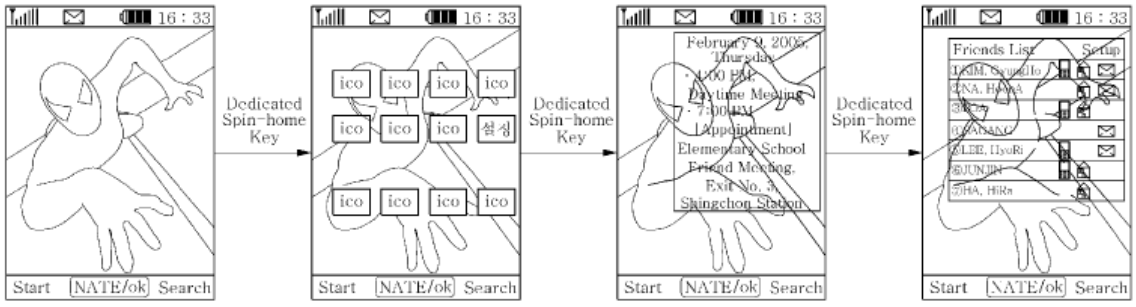
5. By "selecting desired items, the spin-home setup of **selected applications** is toggled **on**/**off**." *Id.*, 7:51-56, Fig. 5A.



5 a 5 b

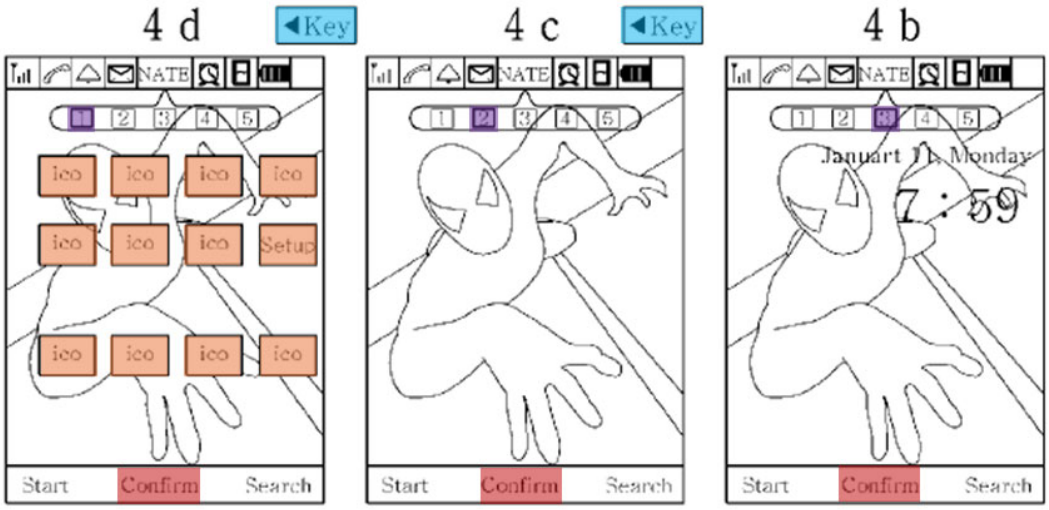
Ex. 1001 (*'720Pat*), FIGs. 5a-5b (annotated).

40. A "shortcut icon screen" is depicted in Figures 3 and 4. For Figure 3, the '720 Patent explains that "the screen is switched to a shortcut icon screen, which has a spin-home number of 1, as shown in FIG. 3b." *Id.*, 7:13-21, Fig. 3. The other screens in Figure 3 "are circulated and displayed" when the "spin-home button is operated," with this example including a "schedule management" screen with a "spin-home number of 2" (Fig. 3c) and a "list of contact addresses of friends," with a "spin-home number of 3" (Fig. 3d). *Id.*



Ex. 1001 (*'720Pat*), FIG. 3.

41. For Figure 4 (an excerpt of which is shown below), the '720 Patent depicts a set of five screens "when the terminal provides a spin-home function," with each screen displaying a set of numerical icons 1-5, with a bolded box around the number for the currently displayed screen. *Id.*, 7:22-48, Fig. 4. Only one of the screens is "a **shortcut icon** screen," which has a "spin-home" number "**1,**" and other screens have a "spin-home **number of 2**," **3**, **4**, and **5** (screens **4-5** are not shown in the excerpt below). *Id.*, 7:23-48, Fig. 4. The '720 Patent also describes that a "**key button** is operated to circulate and display the applications, which have been designated as the spin-home." *Id.*, 7:39-41. "When the user operates the **confirmation key button**," the device "sets up" the screen "which is currently displayed on the LCD display" as the "idle screen." *Id.*, 7:5-8.



Ex. 1001 (*'720Pat*), FIGs. 4b-4d (annotated and excerpted).

B. Prosecution History

42. I reviewed portions of the prosecution history of the '720 Patent, relating to the Examiner's office actions, the Applicant's responses to the office actions and claim amendments, and prior art references cited and discussed during prosecution. *See generally*, Ex. 1004 (*'720FH*).

43. The Examiner issued claim rejections in five instances during prosecution, based on numerous prior art references, including the following: Ex. 1004 (*'720FH*) at 314-329 (2012-07-18 NFOA, rejecting under U.S. Patent App. Pub. 2001/0029193 ("*Ishigaki*") and U.S. Patent App. Pub. 2006/0290661 ("*Innanen*")); 273-286 (2012-12-04 FOA, rejecting under U.S. Patent App. Pub. 2007/0035513 ("*Sherrard*")); 193-216 (2013-07-10 NFOA, rejecting under U.S. Patent App. Pub. 2006/0030370 ("*Wardimon*") and U.S. Patent App. Pub. 2004/02502217 ("*Tojo*")); 153-179 (2013-11-22 NFOA, rejecting again under

Wardimon and *Tojo*), and 072-099 (2014-04-03 NFOA, rejecting under U.S. Patent App. Pub. 2006/0030371 ("*Tanaka*") in view of U.S. Patent App. Pub. 2006/0084477 ("*Wardimon2*"), and further in view of U.S. Patent App. Pub. 2007/0257097 ("*Nurmela*")). In the last rejection before the claims were allowed, the Examiner found that the "closest prior art" reference was *Tanaka*, and that it disclosed most of the claimed graphical user interface features. *Id.*, 018-019. The Examiner also remarked that only setting a "currently displayed screen" as an "idle screen," wherein that "idle screen" includes "indicators" corresponding to a set of screens, was the only feature not disclosed in *Tanaka* alone.

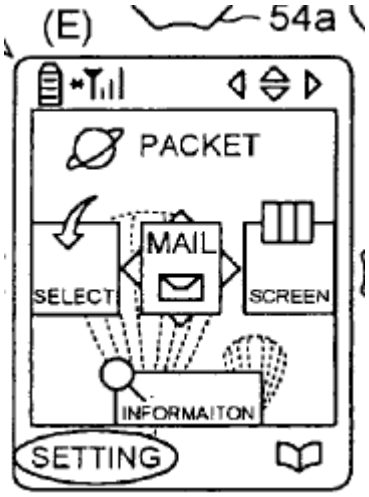
44. I reviewed three prior art references from the prosecution history in greater detail, as they provide context to the Examiner's, Applicant's, and a person of ordinary skill's understanding of the claims.

1. Tanaka

45. *Tanaka* is a patent application titled "Portable Terminal," and it was cited by the Examiner during prosecution of the '720 Patent, and used to reject claims, including in combination with *Wardimon* (which I discuss below), U.S. Patent App. Pub. 2006/0084477 ("*Wardimon2*"), and *Nurmela*. Ex. 1004 (*'720FH*), at 083-097; Ex. 1008 (*Tanaka*), at cover.

46. In relevant part, the Examiner found that *Tanaka* disclosed a "method of setting an idle screen to be displayed in an idle state of a mobile terminal among

a plurality of screen usable as the idle screen." Ex. 1004 (*'720FH*), at 083-085. First, the Examiner found that figure 3E of *Tanaka* discloses an "idle screen to be displayed in an idle state." *Id.*; Ex. 1008 (*Tanaka*), Fig. 3. Figure 3E, shown below, is a mobile device user interface screen that includes icons for launching applications, including a "MAIL" application. Ex. 1008 (*Tanaka*), [0003], Fig. 3.



Ex. 1008 (*Tanaka*), FIG. 3 (excerpted).

47. *Tanaka* also describes that the "screen shown in part (E) of FIG. 3 is an example of the first menu screen," and includes a claim that recites "an idle screen displayed on the display after power-on." *Id.*, [0035], Claim 1. *Tanaka* further describes that a set of additional "menu screens" are "shown in parts (B), (C), (D), (F), (G), (H) and (I) of FIG. 3," and that these additional screens are displayed by using the "left soft key" and the "right soft key" on the device. *Id.*, [0035], Fig. 3. The Examiner found that the additional screens shown in Figure 3 disclosed "a plurality of screen usable as the idle screen." Ex. 1004 (*'720FH*), at 083-085.

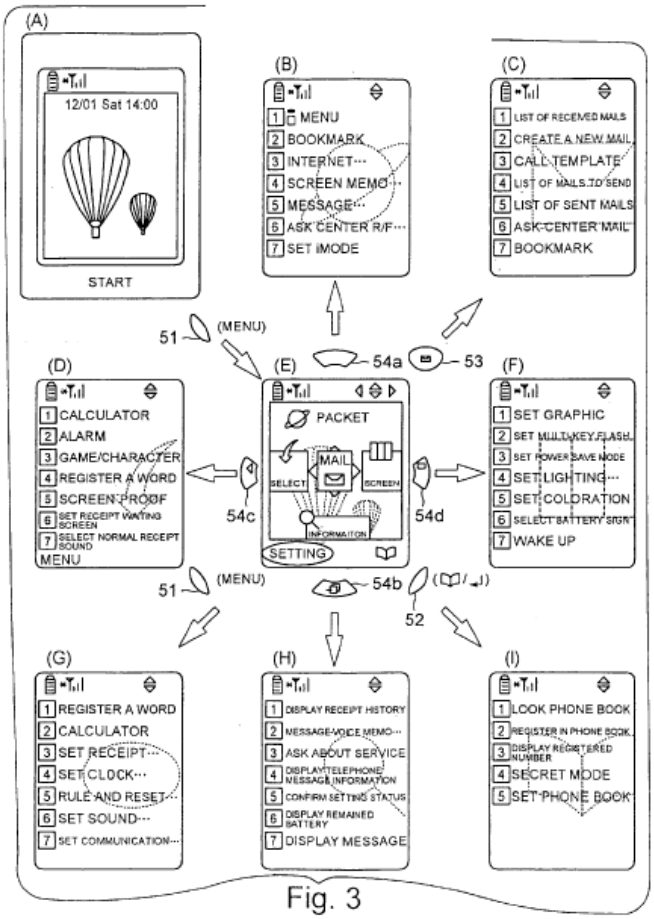
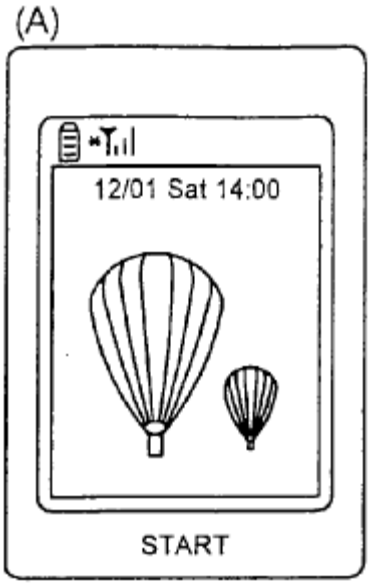


Fig. 3

Ex. 1008 (*Tanaka*), FIG. 3.

48. The Examiner also found that Figure 3A of *Tanaka* disclosed "wherein the screen displays an operating condition of the mobile terminal in common, and the displayed operating condition comprises power utilization and radio wave reception strength." *Id.*, at 085-086. The excerpted version of Figure 3 below shows screen (A), which includes battery level and signal strength indicator icons in the top left corner. As shown in the complete Figure 3 above, both the battery level and signal strength indicator icons remain displayed for all screens, (A) through (I).



Ex. 1008 (*Tanaka*), FIG. 3 (excerpted).

2. Wardimon

49. *Wardimon* (U.S. Patent App. Pub. 2006/0030370) is a patent application titled "Custom Idle Screen For A Mobile Device," and it was cited by the Examiner during prosecution of the '720 Patent, and used to reject claims multiple times, including in combination with *Tanaka*. Ex. 1009 (*Wardimon*), at cover; Ex. 1004 (*'720FH*), at 083-097 (*Tanaka-Wardimon* combination), at 199-214 (*Wardimon-Tojo* combination), and at 158-173 (*Wardimon-Tojo* combination for a second time).

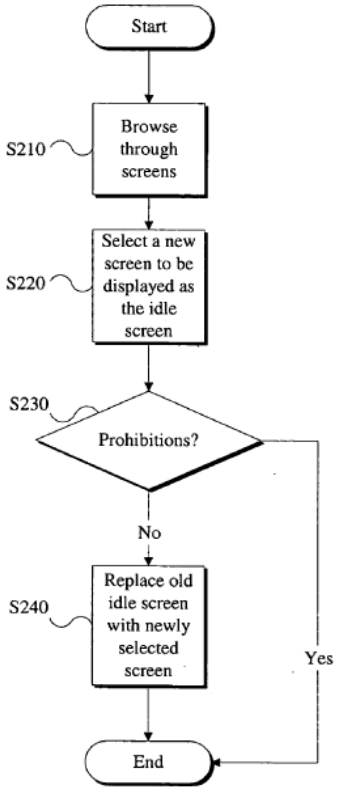
50. In relevant part, the Examiner found that *Wardimon* disclosed an "idle screen." Ex. 1004 (*'720FH*), at 158-161. *Wardimon* relates to a "method of customizing an idle screen for a mobile device," which includes "selecting a first

screen displayed on the mobile device," and "displaying the first screen … when the mobile device is in a first mode." Ex. 1009 (*Wardimon*) at Abstract.

51. Specifically, *Wardimon* describes "selecting a first screen displayed on the mobile device by inter acting with a user interface of the mobile device." *Id.*, [0012]. *Wardimon* goes on to describe "selecting a second screen displayed on the mobile device by interacting with the user interface of the mobile device, wherein a first screen defines the idle screen," and "setting one or more conditions under which the first and second screens are to be displayed." *Id.*, [0014]. With regard to an "idle screen," *Wardimon* further describes that an "idle screen typically comprises the graphic or text that appears on mobile device 120's display when mobile device 120 is in an idle state." *Id.*, [0029].

52. In addition, *Wardimon* describes that a user may "select a particular screen to be displayed instead of the default idle screen." *Id.*, [0031]. *Wardimon* explains that this feature "gives the user the option of switching the idle screen to a screen that the user views most frequently, for example. As such, the user will be able to immediately view the respective screen, without having to press multiple buttons and going through selecting from a hierarchy of menus and submenus as discussed above." *Id.* For this feature, *Wardimon* discloses "software" that "provides the user with the option to set any screen displayed on mobile device 120 as the idle screen." *Id.*, [0032]. For example, one user may wish to set the "inbox

for incoming SMS messages" as "the new idle screen," while another "may want to set the calendar or phone book screen to be displayed while mobile device 120 is idling." *Id.*, [0033]. *Wardimon* explains that setting a new idle screen may be done by "selecting from an 'options' menu, or by pressing a special button on mobile phone 120's keypad." *Id.*, [0034]. The process for setting a new idle screen is depicted in the flow chart of Figure 2, which discloses that the user can "browse through screens," and then select one "to be displayed as the idle screen." *Id.*, [0032], Fig. 2.

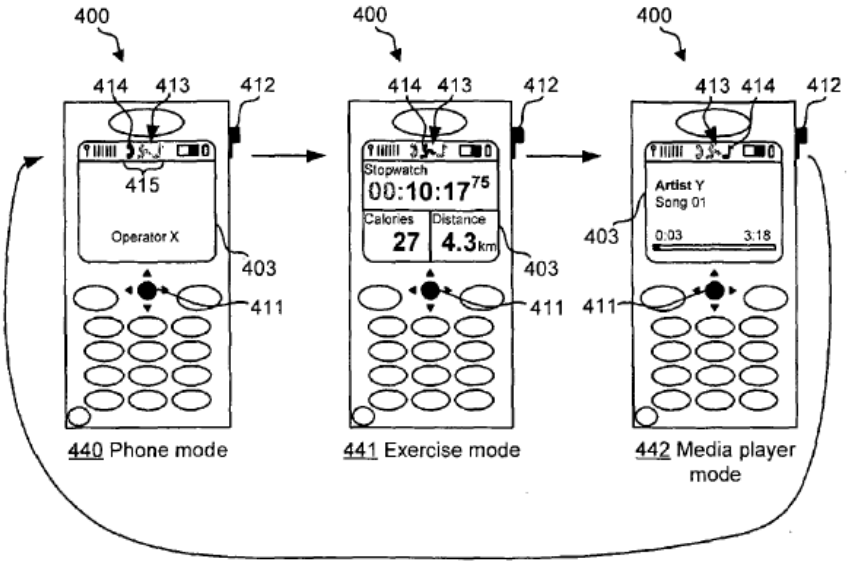


Ex. 1009 (*Wardimon*), FIG. 2.

3. Nurmela

53. *Nurmela* (U.S. Patent App. Pub. 2007/0257097) is a patent application titled "Mobile Communication Terminal and Method," and it was cited by the Examiner during prosecution of the '720 Patent, and used to reject claims in combination with *Tanaka* and *Wardimon*. Ex. 1010 (*Nurmela*) at cover; Ex. 1004 (*'720FH*), at 095-097 (*Tanaka-Wardimon-Nurmela* combination).

54. In relevant part, the Examiner found that *Nurmela* disclosed "wherein the order of the screens is usable in a circular manner." Ex. 1004 (*'720FH*), 095-097. *Nurmela* relates to a "mobile terminal" that allows the "user to switch operational modes," where each mode displays different content – for example, a "phone mode," an "exercise mode," and a "media player mode." Ex. 1010 (*Nurmela*), [0047]-[0053], Fig. 4. Figure 4 depicts a mobile device with those three modes, with each screen displaying different content.



Ex. 1010 (*Nurmela*), FIG. 4.

55. *Nurmela* goes on to describe that the phone's various modes can be "switched serially" by the user. *Id.*, [0053]; Fig. 4. In other words, a user activates a button to switch from "phone mode 440" to "exercise mode 441," and if the user is viewing the last mode in the series – "media player mode" in the Figure 4 example – and activates the "mode switch button," then the display "loops back" to the first "phone mode," as indicated by the return arrow in Figure 4. *Id.*

VIII. OVERVIEW OF THE PRIOR ART

56. In my opinion, by June 2006, setting an idle screen in an idle state, with indicators corresponding to a set of screens, were well-known features in the art of mobile device graphical user interfaces. The *Hawkins*, *Majava*, and *Nielsen* references, which I discuss below, are just some examples of references that disclose such features.

A. Analogous Art

57. I have analyzed the prior art references used in the grounds below, and it is my opinion that they are analogous to the '720 Patent because they are in the same field of endeavor, and are reasonably pertinent to at least one purported problem addressed by the '720 Patent.

58. For example, *Hawkins* is directed to "user interfaces for communication devices, and more particularly to configuring and activating communication modes in a unified manner." Ex. 1005 (*Hawkins*), Abstract, 1:24-28. Like the '720 Patent,

Hawkins is concerned with "improved functionality for accessing favorite features" that a "user designates as a favorite," including for "launching applications." *Id.*, 12:63-13:9.

59. *Majava* is directed to a "user interface with a display and user input for a mobile telephone that provides a set of icons or other user selectable objects in a number of different idle mode screens." Ex. 1006 (*Majava*), Abstract. Like the '720 Patent, *Majava* addresses an interface that "enables very fast and intuitive navigation" between different "pages" on the display, which show "different content including user selectable objects." *Id.*, [0014].

60. *Nielsen* is directed to a system "to enable a user of a mobile device, such as a cellular telephone, to easily switch the display from a home screen, shown while the mobile device is idle, to a glance screen" that shows different "data." Ex. 1007 (*Nielsen*), Abstract. Like the '720 Patent, *Nielsen* addresses an interface that enables the user "to quickly glance at an additional screen of information," where such "screen of information is simply one button away from the home screen." *Id.*, [0024]. *Nielsen* also addresses a set of screens that "are serially accessible," such that the "user simply continues" to navigate while "the display would serially cycle through each" screen, "until the user stopped on one." *Id.*, [0030].

B. Hawkins

61. U.S. Patent No. 7,231,229 ("*Hawkins*") is titled "Communication Device Interface," and issued on June 12, 2007 from an application with a priority date of March 16, 2003. Ex. 1005 (*Hawkins*), cover page.

62. *Hawkins* is directed to "user interfaces for communications devices," including a "cellular phone" or "smart phone." *Id.*, 1:25-28, 5:20-35. The interface includes "screen[s]" that display "graphic representations of buttons, or 'soft' buttons, rather than actual physical buttons." *Id.*, 3:5-9, 6:31-34.[3] *Hawkins'* device includes a "**screen 102**, which may be a liquid crystal display (LCD) or other type of display for presenting output to the user, including representations of speed-dial buttons, menus, and the like." *Id.*, 5:36-39. The device also includes "one or more mechanisms for accepting input from the user," which can include a "keyboard," other "buttons," and a "**five-way button 104**" with "a mechanism for specifying any of at least four directions and further including an activation switch in the center." *Id.* The *Hawkins* device may also include a "touch-sensitive" screen, "so that the user may interact with" the interface "by touching or writing on the surface" "using a stylus, finger, or other object." *Id.*, 5:36-6:13.

[3] Based on my education and experience in the art, such a computer-implemented interface is commonly referred to as "graphical user interface," or GUI.

63. *Hawkins* generally describes a graphical user interface ("GUI") with soft "buttons," including an embodiment that has "an improved speed-dial button scheme for communication devices." *Id.*, 2:38-58. *Hawkins* shows an example mobile device in Figure 1, and a general depiction of its "user interface display including speed-dial buttons" in Figure 2.

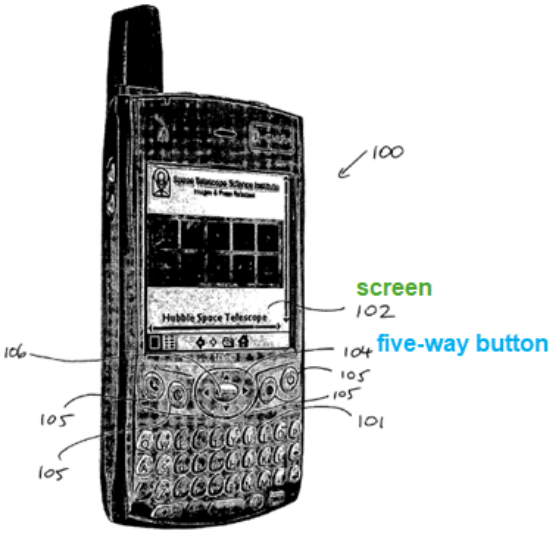


FIG. 1

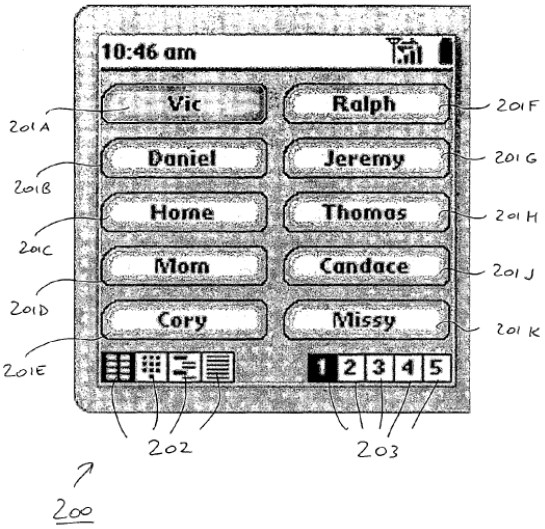


FIG. 2

Ex. 1005 (*Hawkins*), FIGS. 1 (annotated) and 2.

64. However, *Hawkins* also discusses the need for "an integrated mechanism for accessing speed-dial features and ***other features***, by allowing buttons to be assigned to functions other than dialing telephone numbers." *Id.*, 2:38-58. In this aspect, Hawkins further discloses a "a user interface display including favorites buttons," which are "user-assignable," and "provide functionality for" "launching applications," or "for accessing any feature, command, or option that the user designates." *Id.*, 4:28-29, 12:64-13:9. The GUI in Figure 7 shows ten buttons, with

"**favorites buttons 701A through 701H**" assigned to "various functions, such as checking voicemail, surfing the web, checking email, dialing a particular telephone number, and the like." *Id.*, 13:10-16; *see also id.*, 13:29-37. Figure 7 also shows three buttons labelled "701E," which "are currently unassigned, although the user can assign them if he or she wishes." *Id.*, 13:16-18. In addition, the "user can assign and/or configure the text, icons, and keyboard shortcuts as desired." *Id.*, 13:18-24. As shown in Figure 7 below, the buttons can include three items. For example, button 701B includes an icon (the globe), text ("Web"), and a keyboard shortcut ("W").

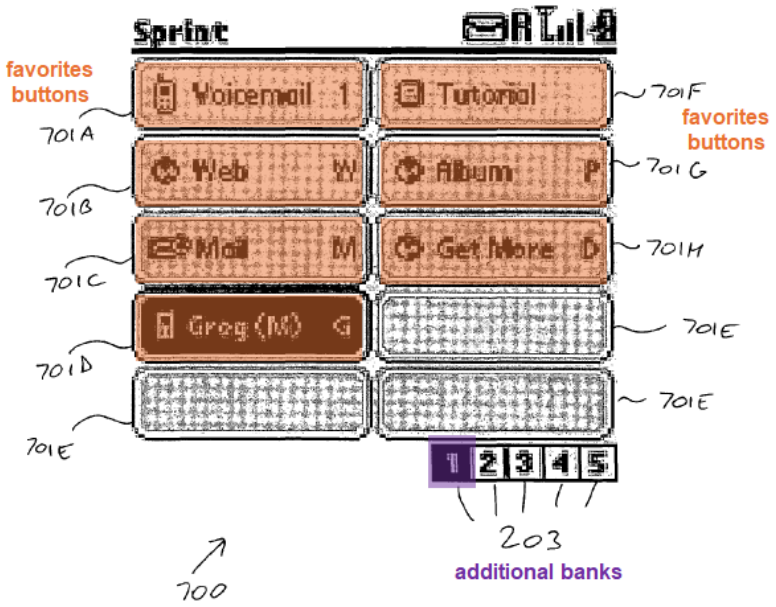


FIG. 7

Ex. 1005 (*Hawkins*), FIG. 7 (annotated).

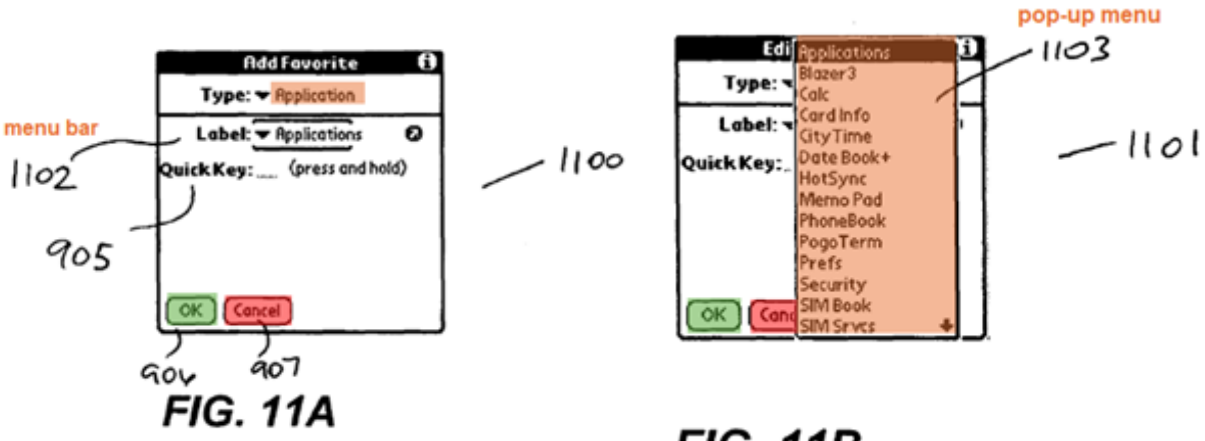
65. *Hawkins* also refers to the buttons as "favorites," and the screen showing the buttons is also referred to as the "favorites view." *Id.*, 13:2-9, 16:66-17:2. As shown in Figure 7, the GUI also includes "**icons 203 for accessing**

additional banks of **favorites buttons 701**," beyond the 10 buttons shown in the figure, with the "banks" also referred to as "button 701 pages." *Id.*, 13:25-28, 13:54-57. The GUI includes the "**1**" icon for the first bank highlighted in purple above. *Id.*. The example in Figure 7 includes "five banks of favorites buttons," "for a total of fifty buttons," with the other banks indicated by icons 2 through 5. *Id.*

66. *Hawkins* further discloses that the user can rearrange the buttons by "dragging" them "from one location to another" on the display. *Id.*, 13:47-53. Or, in order to change the locations of the buttons, the user can select "a command for rearranging or configuring button 701 ***pages***" into any desired order. *Id.*

67. *Hawkins* further discloses functionality for creating and configuring the favorites buttons. For example, the "user can assign a favorites button 701, or edit characteristics of a favorites button 701 (such as the text label, keyboard shortcut, or the like), by selecting an 'Edit Favorites Button' from an onscreen menu." *Id.*, 13:47-53. This action opens up a "dialog box for performing button 701 configuration and/or editing." *Id.* Figures 11A and 11B (shown below) depict example "screens 1100 and 1101 for configuring a favorites button 701 as an application button." *Id.*, 16:51-17:3. A "**menu bar 1102**" and "**pop-up menu 1103**" show "available applications that can be assigned to button 701." *Id.* The "user can select from the applications shown in the menu," and then select "**OK button 906**," which "accepts the user's entries and configures button 701 accordingly." *Id.* After

completing the operation, the "user is returned to the favorites view, with the newly-added or edited button 701 having focus." *Id.* If the user wants to "cancel[] the configuration operation," then "**[c]ancel button 907**" may be selected. *Id.*

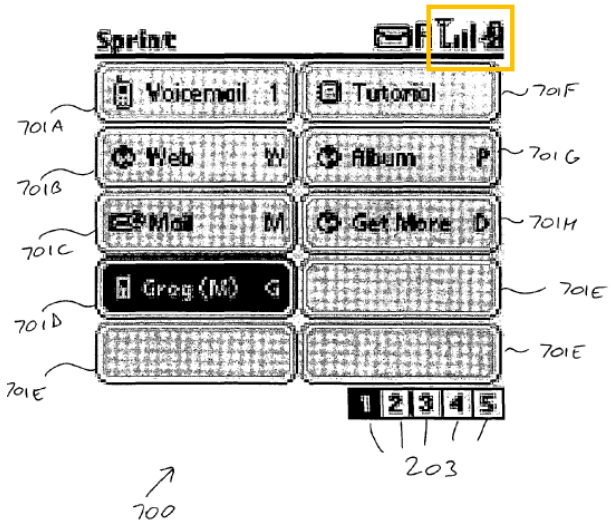


Ex. 1005 (*Hawkins*), FIGS. 11A and 11B (annotated).

68. *Hawkins* further discloses functionality that allows the user to "navigate among favorites buttons" and the multiple button "pages." *Id.*, 13:58-14:50. For example, the user can operate the "up/down/left/right controls on five-way button 104," or can use the touch screen "with a stylus or finger." *Id.*, 13:58-14:2. *Hawkins* also discloses operations for moving quickly between the button "pages." For example, if while viewing a given page "any of the left-side buttons 701 has focus," and the user "hits the left button," then "the previous bank is displayed." *Id.*, 14:2-41. Similarly, if while viewing a given page "any of the right-side buttons 701 has focus" then if the user "hits the right button, the next bank is displayed." *Id.* Moreover, this functionality permits serial navigation of the pages, as *Hawkins*

discloses that if "the last bank" is "already being displayed" when the "user hits the right button," then the GUI loops back to the beginning, and "the first bank is displayed." *Id.* Similarly, if "bank #1" is "already being displayed" and the "user hits the left button," then "the last bank is displayed." *Id.*

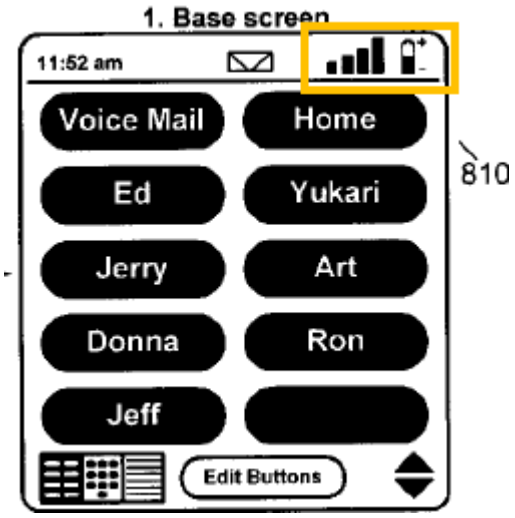
69. *Hawkins* also discloses that its GUI displays standard operational information for mobile devices. For example, the display includes icons depicting a battery, and an antenna with a series of bars. *E.g.*, *Hawkins*, Fig. 7.



Ex. 1005 (*Hawkins*), FIG. 7 (annotated)

70. It was well-known by the time of the alleged invention of the '720 Patent in 2006 that mobile devices could use a battery icon to indicate the battery charge level of the device, and antenna/bars icons to indicate the strength of the radio signal (*e.g.* cellular or similar) for the network that the device is connected to. For example, *Hawkins* itself cites a patent with the same first named inventor (Jeffrey C. Hawkins), U.S. Patent No. 6,516,202, titled "Mobile Computer System Designed

For Wireless Communication Expansion." Ex. 1013 (*Hawkins '202 Patent*), cover. In relevant part, the *Hawkins '202 Patent* relates to a cellular telephone with an "organizer component" and a "cellular component," and depicts "screen shots" of its user interface. *Id.*, 2:47-54, 7:12-17, Fig. 8A. The *Hawkins '202 Patent* describes a "speed dialing screen 810," and explains that "[a]t the top" are displayed "a signal strength indicator, and a battery strength indicator." *Id.*, 7:28-31. Figure 8A below shows that the "signal strength indicator" is an icon with a series of bars, and that the "battery strength indicator" is a battery icon (with + and – terminals).



Ex. 1013 (*Hawkins '202 Patent*), FIG. 8A (excerpted and annotated).

71. *Hawkins* also discloses that its device includes a "general-purpose computer selectively activated or reconfigured by a computer program stored in … a computer readable storage medium, such as … any type of disk … RAMs … or any type of media suitable for storing electronic instructions," with "each coupled to a computer bus system." Ex. 1005 (*Hawkins*), 18:43-55.

C. Majava

72. U.S. Patent App. Pub. No. 2006/0236266 ("*Majava*") is titled "User Interface," and was published on October 19, 2006, from an application that was filed on March 18, 2005. Ex. 1006 (*Majava*), cover page.

73. *Majava* is directed to a "user interface with a display and user input for a mobile telephone that provides a set of icons or other user selectable objects in a number of different idle mode screens." *Id.*, Abstract.

74. Specifically, *Majava* discloses a GUI with "a set of different idle mode pages containing different content including user selectable objects." *Id.*, [0014]. The GUI is "configured to enable navigating between the idle mode pages in a relative fashion so that a navigation command changes a presented idle mode page to another one dependent on the currently presented idle mode page." *Id.* According to *Majava*, this feature "enables navigating a set of idle mode pages with navigation commands fewer in number than the idle mode pages," and "enables very fast and intuitive navigation." *Id.*

75. *Majava* discloses that:

> ***When switched on***, mobile telephones typically ***first enter an idle mode*** in which they may communicate with a radio access network and negotiate different connection parameters, ***but are not yet engaged into any particular user interaction***. Most phones usefully display

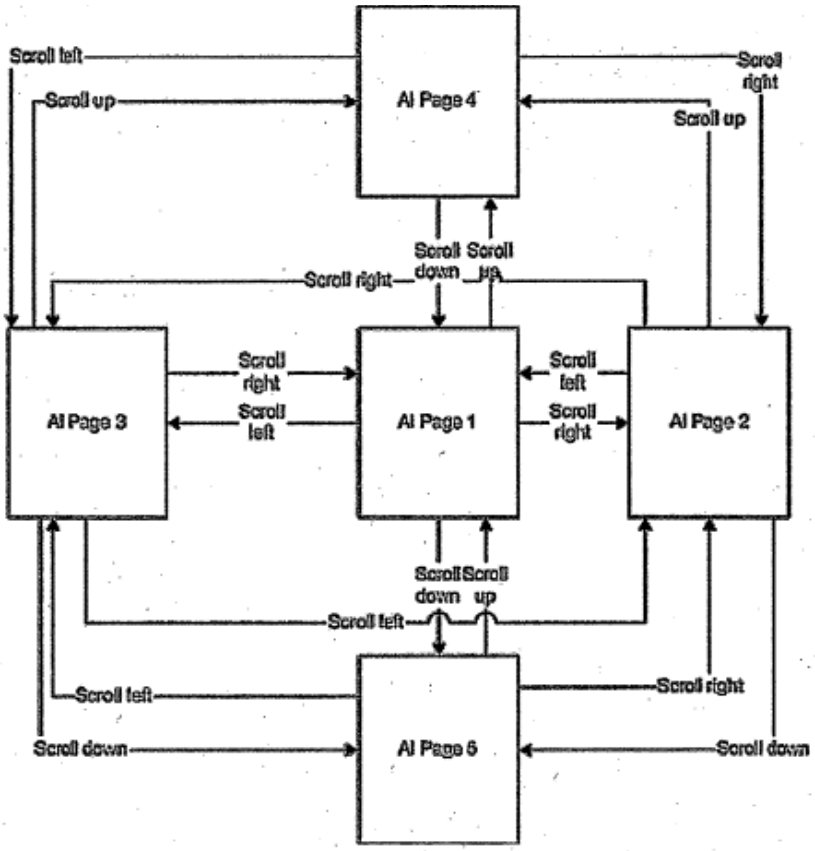
> indications of ***remaining battery charge and present signal strength*** and often they also display the present time, date, operator name and cell information. However, to access other interesting information, the user has to navigate through menu or icon arrangements to display such information.

Id., [0025].

76. *Majava's* GUI includes "three basic idle modes." *Id.*, [0025]-[0029]. The first is "[p]assive idle mode," which displays "traditional idle mode information such as missed calls, time, field strength and battery charge." *Id.*, [0027]. The second is "[f]ocused active idle (AI) mode," where the device "processes the presently displayed content" in response to "user input." *Id.*, [0028]. The third is "[n]on-focused AI," where "the user may entirely change the presently displayed content between two or more predetermined presentations." *Id.*, [0029]. *Majava* explains that these presentations "may contain icons, reminders, images or generally any potentially interesting content or desired content to which an easy access is desired." *Id.*, [0030]. According to *Majava*, the "non-focused AI mode thus enables [a] very efficient way for the user to access [] different presentations containing different information," which the "user may configure" or can be "preconfigured," by "using the keys" of the phone. *Id.*

77. For example, one "page may contain time management information including to-do lists or list items, pending or next calendar items and current presence status used in instant messaging." *Id.*, [0034]. Another "page may contain user selected items from any or given phone functions such as preferred game pointers, on-line instant messaging or chatting text boxes, remote control for external devices such as audio visual equipment." *Id.* The "default page, may also contain the same information as a traditional passive idle mode page such as field strength, battery charging status, date, time, operator name, profile name, user name, message indicators, key and phone lock indicators, incoming call indicators, data call indicators and soft key legends." *Id.* The pages may also contain certain information in common, because "most essential operational information such as battery and field indications are advantageous to present on all pages." *Id.*

78. A schematic diagram of the GUI "when in the non-focused AI mode" is depicted in Figure 2, which shows "five different displays by their name (AI page 1 to 5) wherein AI page 1 is a default page." *Id.*, [0032]. *Majava* explains that "[n]avigating to any of the four directions changes to an AI page in the respective direction." *Id.* The navigation "can be implemented in a number of ways," including "a user selection via menu or icon based control panel," and "short cut keys and menu choices or soft keys. *Id.*, [0033].



Ex. 1006 (*Majava*), FIG. 2.

79. *Majava* further discloses that the "user can also be let customise [sic] the order of AI pages, that is, to decide which page follows which one if the user navigates in them by repeatedly using the same navigation command." *Id.*, [0038]. In my opinion, a person of ordinary skill in the art would have understood this aspect of *Majava* to teach that any of the AI pages can be designated as the "default" AI page 1, as selected by the user. This is because *Majava* explains that the "five different displays" are associated with "their name (AI page 1 to 5) wherein AI page 1 is a default page," and navigating in different direction "changes to an AI page in the respective direction." *Id.*, [0032]. Thus, if the user customized the order of the

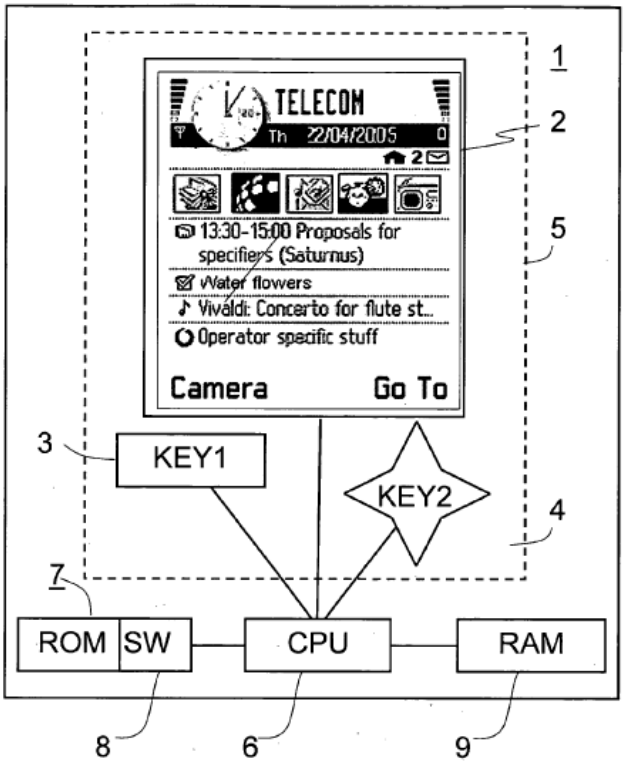
pages by changing how they follow each other numerically—for example, changing which page was associated with the location associated with number 1—that would also change which page appeared as the "default" page 1 while navigating them.

80. *Majava* also explains that because "the AI modes may expose the user to accidentally displaying personal information to anyone who sees the display 2, the phone can be configured to automatically revert to the default AI page 1 after a given period of idle time." *Id.*, [0038].

81. *Majava* also discloses details of the device on which its "user interface" is implemented, with a graphical schematic shown in Figure 1. The device is a "mobile telephone," which includes a "display 2 for displaying content (such as text, images and icons) and keys 3 and 4 for user input." *Id.*, [0023]. The device also includes a "processor," and "[n]on-volatile or long-lasting memory," which "contains operating instructions, that is software, according to which the processor operates." *Id.*, [0024]. Specifically, the "processing circuitry comprises a processor 6 that may be a Master Control Unit (MCU)," and the "processor generally controls various operations of the phone including the operation of the user interface 5." *Id.*

82. The device accepts "user input" via "means of one or more keys," or may have a "touch screen" that accepts input from a "hand or finger." *Id.*, [0039]. Figure 1 shows an example display with "content (such as text, images and icons),"

and "indications of remaining battery charge and present signal strength." *Id.*, [0023], [0025], Fig. 1.



Ex. 1006 (*Majava*), FIG. 1.

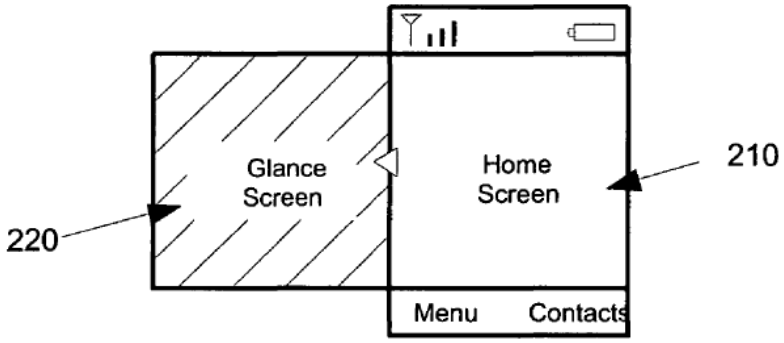
D. Nielsen

83. U.S. Patent App. Pub. No. 2007/0094596 ("*Nielsen*") is titled "Glance Modules" and was published on April 26, 2007, from an application that was filed on October 25, 2005. Ex. 1007 (*Nielsen*), cover page.

84. *Nielsen* is directed to a system "to enable a user of a mobile device, such as a cellular telephone, to easily switch the display from a home screen, shown while the mobile device is idle, to a glance screen" that shows different "data." *Id.*, Abstract. In *Nielsen's* GUI, "[t]he home screen includes information deemed to be

desirable for general display, and the glance screen includes more special-purpose information." *Id.*, [0008].

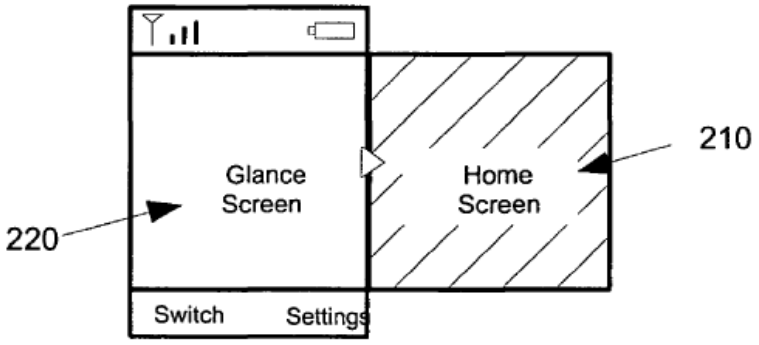
85. Figure 2 shows a "conceptual illustration of two screens that may be displayed on a mobile device," where the "home" screen has a "current focus." *Id.*, [0025]. The "home screen 210 is ***the first or default view presented***, such as when the mobile device is initialized or becomes idle or dormant (referred to as the '***idle state'***)." *Id.* "During the idle state, the user can interact with any features or operations displayed on the home screen 210. When the user activates the 'glance trigger' (e.g., the left directional button 113 in this example), the display changes to the glance screen 220, as shown in FIG. 3." *Id.*



Ex. 1007 (*Nielsen*), FIG. 2.

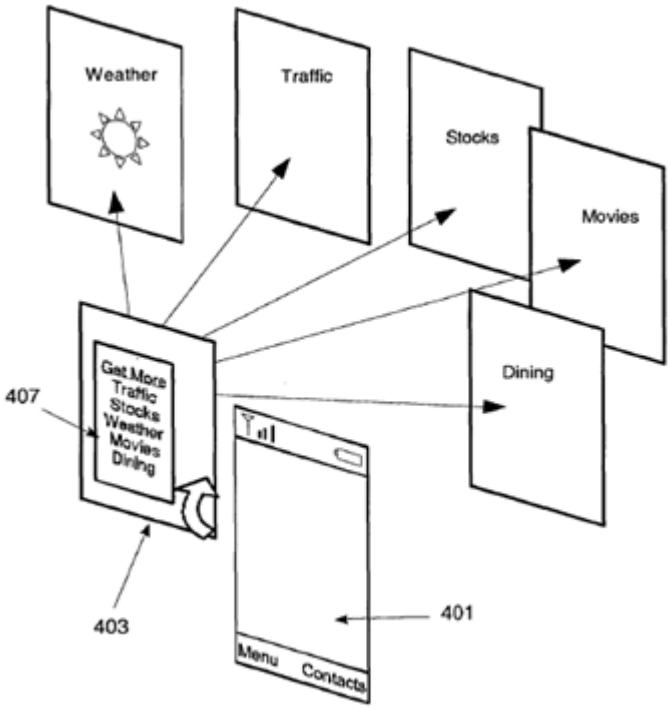
86. Figure 3 shows "another view of the screens," where the "glance" screen has the "current focus." *Id.*, [0026]. "In the glance state, the home screen 210 is not visible," and instead a "glance module" is shown on the screen with "specialized display content." *Id.* *Nielsen* explains that "[a]t the expiration of a

timeout period, or perhaps at the user's direction, the display returns to the idle state in which the home screen 210 is displayed." *Id.*, [0027].



Ex. 1007 (*Nielsen*), FIG. 3.

87. *Nielsen* further discloses that the GUI may include multiple "glance modules," as shown in Figure 4, which may display information such as "weather reports, stock quotes, current traffic conditions, an e-mail inbox, an instant messaging interface, an image slideshow, the operational status of the mobile device, and the like." *Id.*, [0028], [0044].

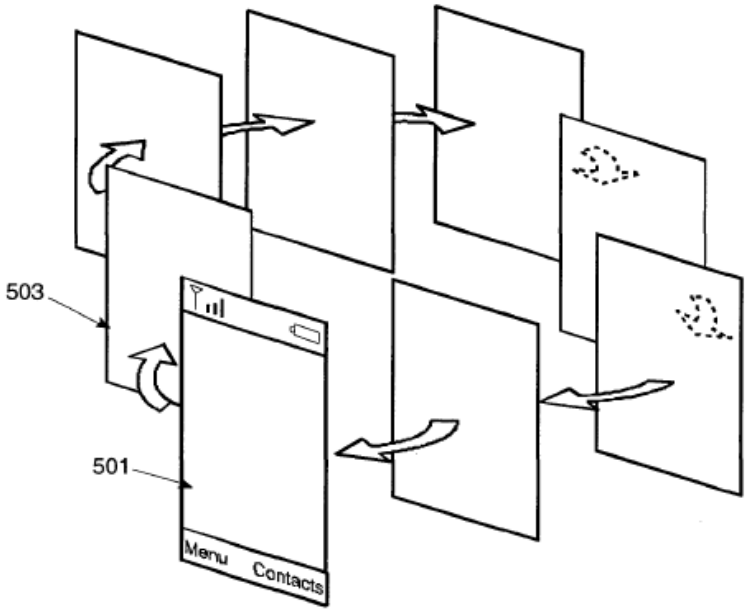


Ex. 1007 (*Nielsen*), FIG. 4.

88. *Nielsen* further discloses that the "current glance module" could show "a weather report or stock quote screen," which "may not be the one that the user desires to see at the moment. So, the user can change the current glance module 403 using a selection mechanism." *Id.*, [0029]. In one way to do so, "the user presses a soft key associated with a switch list option 409 to bring up a switch list 407," and then "scrolls up or down the switch list 407 to select the desired glance module." *Id.* From then on, "when the user subsequently activates the glance trigger, the newly selected glance module will be immediately displayed." *Id.*

89. *Nielsen* also discloses a functionality whereby the "glance modules are serially accessible," as illustrated in Figure 5. *Id.*, [0030], Fig. 5. This approach

"provides a simpler mechanism for switching between glance modules," whereby "the user simply continues to activate the glance trigger until the desired glance module is presented. In other words, the display would serially cycle through each installed glance module with each activation of the glance trigger until the user stopped on one. When the user stops on a glance module, that one becomes the new current glance module." *Id.* As discussed above, the "glance trigger" refers to, for example, "pressing the left directional button" on the device so that "the display of the mobile device first switches to a current glance module." *Id.*, [0028].



Ex. 1007 (*Nielsen*), FIG. 5.

IX. CLAIM CONSTRUCTION

90. I have given all the claim terms their plain and ordinary meaning, as would have been understood by a person of ordinary skill in the art at the time of the

alleged invention, having taken into consideration the language of the claims, the specification, and the prosecution history of record.

X. SPECIFIC GROUNDS FOR CHALLENGE

91. In the sections below, I provide my opinions to explain how Claims 1-16 of the '720 Patent are not patentable over the prior art. Specifically, I address the following:

a. **Ground 1**, which challenges Claims 1-16 as rendered obvious by the combination of *Hawkins* and *Majava*; and

b. **Ground 2**, which challenges Claims 7, 12, and 16 as rendered obvious by the combination of *Hawkins*, *Majava*, and *Nielsen*.

XI. DETAILED EXPLANATION OF THE GROUNDS

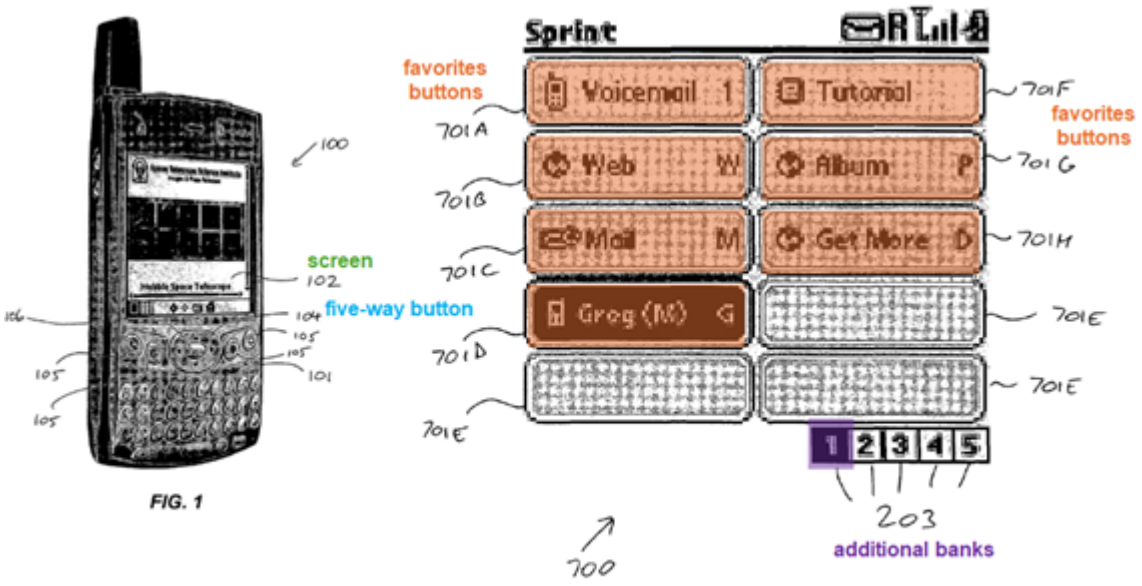
A. Ground 1: *Hawkins* In Combination With *Majava* Renders Obvious Claims 1-16

1. Motivation to Combine *Hawkins* and *Majava*

92. In my opinion, a person of ordinary skill in the art would have been motivated to combine the teachings of *Hawkins* and *Majava*, and would have had a reasonable expectation of success in doing so.

93. *Hawkins* teaches a mobile device GUI with user-customizable screens of favorites buttons, that are assigned to and launch applications available on the device. *See* §VIII.B. (overview of *Hawkins*).

94. For example, *Hawkins* discloses a GUI for "mobile telephones" with "five banks of favorites buttons 701," with ten buttons available on the first bank and each of the other four banks (or "pages"), "for a total of fifty buttons 701." Ex. 1005 (*Hawkins*), 3:35-44, 4:28-29, 5:36-55, 6:4-13, 13:10-19, 13:25-28, Fig. 1, Fig. 7. The GUI is displayed on the mobile telephone's "screen 102," and the device also may include keys, buttons, a "touch-sensitive" screen, and/or a "**five-way button 104**." *Id.* A screen of "favorites buttons" is also referred to as the "favorites view." *Id.*, 13:2-9, 16:66-17:2. Each "user-assignable button" can be assigned to "functionality for accessing favorite features, including for example launching applications." *Id.*, 12:63-13:9. As depicted in Figure 7, "**favorites buttons 701A through 701H**" may be assigned to "various functions, such as checking voicemail, surfing the web, [and] checking email," while buttons "701E are currently unassigned, although the user can assign them if he or she wishes." *Id.*, 13:10-24, Fig. 7.



Ex. 1005 (*Hawkins*), FIGS. 1 and 7 (annotated).

95. *Hawkins* further teaches that in the "favorites view" shown in Figure 7, the GUI includes "**icons 203 for accessing additional banks** of **favorites buttons 701**," which are also referred to as "button 701 pages." *Id.*, 13:25-28, 13:54-57. The numerical icons 1, 2, 3, 4, and 5 correspond to each of the "**five banks**" of "**favorites buttons 701**." *Id.* *Hawkins* teaches that the user can rearrange these five "button 701 pages" into any order, by "selecting a command" for "rearranging or configuring button 701 pages." *Id.*, 13:47-53. *Hawkins* also teaches that "***[i]nitially***, the first (top-left) button 701 has focus when display 700 is presented" to the user. *Id.*, 13:58-60. In Figure 7, the "first (top-left) button 701" is depicted for the page designated with the numerical icon 1. *Id.*, Fig. 7.

96. *Majava* also teaches a mobile device GUI with "five different displays," which are referred to as "active idle" pages numbered "AI page 1 to 5." Ex. 1006 (*Majava*), [0028]-[0032], Fig. 2. *Majava* discloses that "AI page 1 is a default page," and that pressing a 4-way directional key "changes" the screen to one of the other four AI pages "in the respective direction." *Id.*, [0032]. *Majava* discloses that the AI pages contain "icons" and "any potentially interesting content or desired content to which an easy access is desired," and the "default page" may "contain the same information as a traditional passive idle mode page such as field strength, battery charging status, date, time," and so on. *Id.*, [0030], [0034]. *Majava* further discloses that when "the user navigates" in the "AI pages" the user can "customise [sic] the order of AI pages, that is, to decide which page follows which one." *Id.*, [0038]. As I discussed above, a person of ordinary skill in the art would have understood this aspect of *Majava* to teach that any of the AI pages can be designated as the "default" page 1, as selected by the user. *Majava* further discloses that because navigating within the pages "may expose the user to accidentally display personal information to anyone who sees the display 2, the phone can be configured to automatically revert to the default AI page 1 after a given period of idle time." *Id.*, [0038].

97. In my opinion, a person of ordinary skill in the art would have recognized that both *Hawkins* and *Majava* are directed to similar mobile telephone GUI systems and methods. As I discussed in §VIII.B (overview of *Hawkins*) and in

§VIII.C (overview of *Majava*), both GUI systems include multiple pages (five pages in the depicted examples for both references) that the user can easily navigate between, where each page may contain items including one or more icons or favorites buttons (to, for example, launch applications). Both GUIs also allow the user to customize or rearrange the order of the pages, such that the user can decide which page is displayed first, and can decide the order in which they are navigated.

98. In my opinion, a person of ordinary skill in the art would have appreciated that *Majava*'s functionality for automatically reverting a mobile telephone display to show a default page would have enhanced *Hawkins'* GUI for the same reason that *Majava* teaches the feature – namely, to avoid the user accidentally displaying or exposing personal information to someone who is able to see the "screen 102."

99. For example, when using *Hawkins'* GUI system a user could select a favorites button to launch an application or a webpage, such as an e-mail application or a banking application, which could display the user's personal or other sensitive information on the "screen 102." If the user stopped actively using that application or webpage and *Hawkins'* GUI continued to display the application on the "screen 102," someone else could inadvertently (or maliciously) view the user's personal or other sensitive information. Thus, a person of ordinary skill in the art would have recognized an advantage from having the display automatically return to the first

page of "favorites buttons" after a period of idle time, which is taught by *Majava*, in order to reduce the chances of accidentally exposing the user's personal or other sensitive information to others. Thus, in my opinion a person of ordinary skill in the art would have found it obvious to incorporate *Majava's* teachings regarding reverting to a default page after a period of idle time into *Hawkins'* similar GUI.

100. In my opinion, this combination would have been obvious to a person of ordinary skill in the art because it would have merely amounted to applying a known technique (*Majava*'s teaching to revert to a first AI page after a given period of idle time) to a known device (*Hawkins*' mobile telephone with a user interface having multiple pages of favorites buttons from which a user can launch applications) ready for improvement to yield predictable results (the *Hawkins-Majava* combination in which the mobile telephone's user interface is configured to automatically revert to a default/first page after a given period of idle time).

101. In my opinion, this combination also would also have been obvious to a person of ordinary skill in the art because it would have merely amounted to applying a known technique (*Majava*'s teaching to revert to a first AI page after a given period of idle time) to similar devices (*Hawkins*' mobile telephone with a user interface having multiple pages of favorites buttons from which a user can launch applications) in the same way (the *Hawkins-Majava* combination in which the

mobile telephone's user interface is configured to automatically revert to a default/first page after a given period of idle time).

102. In my opinion, a person of ordinary skill in the art also would have had a reasonable expectation of success in implementing this combination, because *Hawkins*' GUI already includes multiple pages, which are designated in numerical order, and has functionality that allows the user to rearrange the order of the pages. Ex. 1005 (*Hawkins*), 13:54-57. And *Majava* discloses automatically returning to a default AI page 1 after a given period of idle time in a GUI that is very similar to *Hawkins*', as it also has multiple pages, which are designated in numerical order, and functionality for the user to rearrange their order. Ex. 1006 (*Majava*), [0038]. In my opinion, it would have been well within a person of ordinary skill in the art's ability to incorporate *Majava*'s additional known functionality into *Hawkins*' existing mobile user interface, including because doing so would only involve a relatively minor change to the GUI software.

2. Independent Claim 1

a. 1[Pre] ("A method of setting an idle screen to be displayed in an idle state of a mobile terminal among a plurality of screens usable as the idle screen, the method comprising")

103. The preamble to Claim 1 of the '720 Patent recites "[a] method of setting an idle screen to be displayed in an idle state of a mobile terminal among a plurality of screens usable as the idle screen, the method comprising," and I have

been asked to assume that the preamble is a claim limitation. Under that assumption, it is my opinion that *Hawkins* in combination with *Majava* teaches the preamble of Claim 1.[4]

104. Before discussing the references, I will first address how in my opinion a person of ordinary skill in the art would have understood the terms "idle screen" and "idle state" as used in the claims of the '720 patent, in view of the claims, specification, and file history of the '720 Patent, as well as the state of the art.

105. The '720 Patent describes an "idle screen" as "a ***starting point*** for using for using various applications provided by mobile communication terminals." Ex. 1001 (*'720Pat*), 1:66-67. During prosecution of the parent application to the '720 Patent (application No. 11/911,277), which I understand shares substantively the same specification as the '720 Patent, the applicant argued that this description "does not contradict with the common knowledge that the idle screen refers to a screen displayed on the display module when the mobile communication terminal is in an idle mode." Ex. 1014 (*'277FH*), at 246.

106. The specification of the '720 Patent does not use the term "idle state," but in the context of the subject matter described in the '720 Patent claims,

[4] I have been informed by counsel that that the term "teaches" includes both express teachings, as well as those fairly suggested to a person of ordinary skill in the art.

specification, and file history, a person of ordinary skill in the art would have understood this term to encompass a condition in which the device is powered on and displaying a screen, but is not being used for displaying an application program.

107. For example, *Innanen* discloses that mobile cellular telephones "typically have a standby screen," which is "displayed when the device is switched on i.e. when the device is 'active' and while the device is not used for a specific application i.e. while the device is idle."[5] Ex. 1011 (*Innanen*), at [0002]. *Inannen* later describes such condition as an "idle state," as it claims that an aspect of its invention is "a user interface having a display for ***displaying a standby screen when the device is in an idle state***." *Id.*, at [0007].

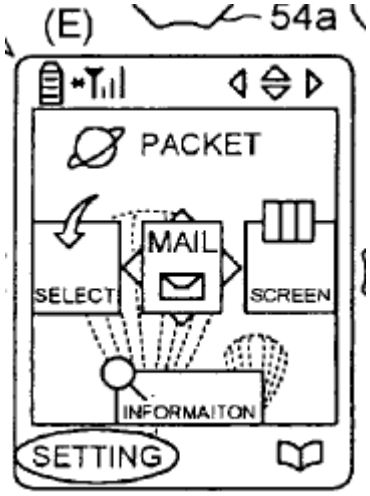
108. I also note that a contemporary dictionary of computer terminology defines "idle state" as "[t]he condition in which a device is operating but is not being used." Ex. 1012 (*Computer Dictionary*), at 264.

109. The prosecution history of the '720 Patent also shows that the Examiner had a similar understanding of these terms, as evidenced by discussions of the

[5] For the sake of clarity, to the extent that I refer to Ex. 1008 through Ex. 1014 in this declaration, I do so merely to demonstrate a person of ordinary skill in the art's knowledge or understanding, and/or as evidence that a person of ordinary skill in the art would have been motivated to make the combinations in the manner I discuss in this declaration. These exhibits are not part of the unpatentability grounds.

Tanaka and *Wardimon* references, which I discussed above. *See* §VII.B.1 (overview of *Tanaka*); §VII.B.2 (overview of *Wardimon*).

110. For example, in one office action rejection, the Examiner found that Figure 3E of the *Tanaka* reference discloses "displaying, in the idle state, one of the screens as the idle screen." Ex. 1004 (*'720FH*), at 084, *see also* at 083-090; Ex. 1008 (*Tanaka*), Fig. 3. As shown below, Figure 3E in *Tanaka* depicts a mobile device GUI screen, which includes icons for launching applications, including a "MAIL" application. Ex. 1008 (*Tanaka*), [0003], Fig. 3. *Tanaka* describes that the "screen shown in part (E) of FIG. 3 is an example of the ***first*** menu screen" that is also "called a graphical menu," and *Tanaka* also includes a claim that recites "an idle screen displayed on the display ***after power-on***." *Id.*, [0035], Claim 1.



Ex. 1008 (*Tanaka*), FIG. 3 (excerpted).

111. In another office action rejection, the Examiner found that the *Wardimon* reference discloses an "idle screen." Ex. 1004 (*'720FH*), at 159, *see also*

at 158-171; Ex. 1009 (*Wardimon*), Fig. 1 (with "idle screen" 125 and 126). *Wardimon* relates to a "system and corresponding methods that facilitate the process of customizing an idle screen for a mobile device." Ex. 1009 (*Wardimon*), [0008]. Specifically, *Wardimon* describes its GUI as including a "first screen" that is "displayed on the mobile device," which is referred to as an "idle screen." *Id.*, [0014], [0036]. *Wardimon* also explains that an "idle screen" displays information including the "time," and also displays "the root menu level from which a user can access other display directories or subdirectories by pressing one or more buttons," which include applications such as a "calendar, phone book, SMS messages, voice messages, call history, games, etc." *Id.*, [0029]-[0030]. *Wardimon* further explains that an "idle screen typically comprises the graphic or text that appears on mobile device 120's display when mobile device 120 ***is in an idle state***." *Id.*

112. In responding to the Examiner's rejections and use of *Tanaka* and *Wardimon*, the Applicant did not disagree with the Examiner's understanding of these references as it relates to "idle screen" and "idle state." Ex. 1004 (*'720FH*), at 136-46, 059-68.

113. I also reviewed the Patent Owner's infringement contentions that it submitted in the parallel Litigation involving the '720 Patent, and those contentions show that Patent Owner's interpretation of "idle screen" and "idle" state appear to be consistent with my discussion above. For example, in its contentions Patent

Owner identifies a smartphone with a GUI, and contends that the meaning of "idle screen" encompasses the smartphone's "home screen which includes one or more shortcut icons (which correspond to application programs)." Ex. 1015, at 12. In those contentions Patent Owner also contends that the meaning of "idle state" encompasses a condition in which the smartphone is "*i.e.*, not operating a [sic] displaying an application program," but is "display[ing] a home screen." *Id.*

114. In my opinion, therefore, a person of ordinary skill in the art would have understood "idle screen" as used in the claim to encompass a screen comprising a starting point for using various applications, and "idle state" to encompass a condition in which a device is powered on and displaying a screen, but is not being used for displaying an application program. With the above understanding of the claim terms in mind, I now address the asserted references for this ground.

115. *Hawkins* teaches a mobile telephone GUI usable in a method for setting a screen as a starting point for using applications that are available on the mobile telephone, in a manner that is consistent with the '720 Patent's usage of the term "idle screen" in the phrase "setting an idle screen to be displayed," and consistent with a person of ordinary skill in the art's understanding of the term. *Hawkins* discloses "a user interface display including favorites buttons," which are "user-assignable," and "provide functionality for" "launching applications." Ex. 1005 (*Hawkins*), 4:28-29, 12:64-13:9. *Hawkins* also refers to this interface as the

"favorites view." *Id.*, 6:66-17:2. The "favorites view" GUI in Figure 7 includes ten buttons, with "**favorites buttons 701A through 701H"** assigned to functions that include "checking voicemail, surfing the web, [and] checking email." *Id.*, 13:10-16; *see also id.*, 13:29-37. The "favorites view" also has "unassigned" buttons labelled "701E," which the "user can assign." *Id.*, 13:16-18. In addition, the user can "configure the text, icons, and keyboard shortcuts as desired" for each button. *Id.*, 13:18-24. Further, *Hawkins* refers to the "buttons" shown in Figure 7 as one of "button 701 pages," which are also referred to as "**additional banks** of **favorites buttons 701**" indicated by "icons 203," with the number **1** icon indicating the first page. *Id.*, 13:25-28, 13:54-57.

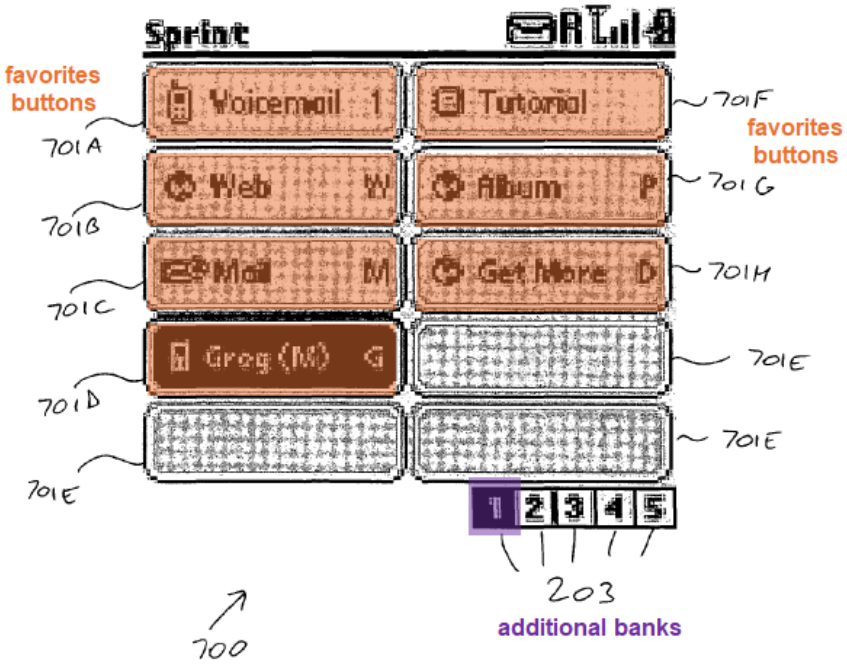


FIG. 7

Ex 1005 (*Hawkins*), FIG. 7 (annotated).

116. A person of ordinary skill in the art also would have understood that *Hawkins'* "favorites view" GUI teaches "screens" as that term is used in the preamble, because *Hawkins* describes the content that is shown on the physical display of the mobile telephone as a "screen shot" or a "screen." *E.g.*, *id.*, 3:5-9, 6:26-49, Fig. 2. For example, *Hawkins* describes Figure 2 as showing a "screen shot 200" of a "buttons" page that "may be displayed on screen 102." *Id.* Similarly, *Hawkins* describes Figure 3 as showing a "screen shot 300" of a page that "may be displayed on screen 102." *Id.*, 7:6-27, Fig. 3. I note here that *Hawkins* also uses "screen" to refer to the physical display component of the mobile device, which "includes screen 102, which may be a liquid crystal display (LCD) or other type of display for presenting output to the user." *Id.*, 5:36-38. Thus, a person of ordinary skill in the art would have understood that *Hawkins'* page of favorites buttons teaches an "idle screen."

117. Additionally, *Hawkins* in combination with *Majava* teaches a method for setting an "idle screen to be ***displayed in an idle state*** of a mobile terminal." As I discussed above, *Hawkins* discloses a "favorites view" that displays a "button 701 page," and *Majava* discloses automatically returning back to the "default" AI page 1, after a certain period of "idle time." For the reasons I discussed in §XI.A.1, a person of ordinary skill in the art would have found it obvious to combine the teachings of *Hawkins* and *Majava* so that the mobile telephone's GUI would

automatically return to the "button 701 page" designated as the first page, after a certain period of idle time. In this condition, a person of ordinary skill in the art would have understood the "button 701 page" to be "displayed in an idle state of a mobile terminal," because the page is displayed while the device is powered on and displaying a screen, but is not being used for displaying an application program.

118. Further, *Hawkins*' GUI also discloses "icons 203 for accessing additional banks of favorites buttons 701," with a total of "five banks" and "fifty buttons" shown in Figure 7. *Id.*, 13:25-28, 13:54-57, Fig. 7. The "icons" for the additional banks are boxes with the numerals 1 through 5, with the "1" icon for the first bank highlighted in purple in the above annotated version of Figure 7. *Id.* *Hawkins* further teaches that the user can select a "command for rearranging" the "button 701 ***pages***" into any desired order. *Id.* Thus, a person of ordinary skill in the art would have understood *Hawkins* to teach a "a plurality of screens usable as the idle screen," because the first "button 701 page" teaches an "idle screen" for the reasons discussed above, and these additional aspects of *Hawkins* disclose that the user can rearrange the pages to designate any page from among those numbered 2 through 5 as the new first page.

119. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination to teach setting a first page of favorites buttons of a mobile telephone, wherein the buttons correspond to

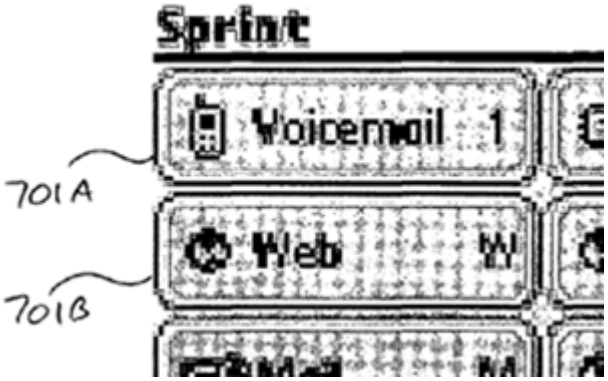
applications on the mobile telephone and launch the applications when selected ("setting an idle screen"), as the page of buttons that is displayed after a given period of idle time ("to be displayed in an idle state of a mobile terminal"), wherein the first page is selected from among five pages of favorites buttons, any of which can be designated as the first page ("among a plurality of screens usable as the idle screen").

b. 1[a] ("selecting application programs from application programs installed in the mobile terminal, based on a selection from a user, wherein each of the selected application programs is allocated to one of the screens so that the screens present shortcut icons of the application programs allocated thereto")

120. In my opinion, *Hawkins* in combination with *Majava* teaches this feature.

121. *Hawkins* discloses that the "favorites buttons" on its "favorites view" pages are "user-assignable," including for the functionality of "launching applications." Ex. 1005 (*Hawkins*), 12:64-13:9. Specifically in reference to the GUI shown in Figure 7, *Hawkins* discloses that the "user can assign each button 701 to any of several different functions," which include "[l]aunching an application." *Id.*, 13:29-37, Fig. 7. Similarly, *Hawkins* references the "currently unassigned" buttons labelled 701E in Figure 7, and discloses that the "user can assign them if he or she wishes." *Id.*, 13:10-24. In addition, the user can customize the appearance of each button by configuring "the text, icons, and keyboard shortcuts." *Id.* For example,

button 701B in Figure 7 includes an icon (the globe), text ("Web"), and a keyboard shortcut ("W"). *Id.*



Ex. 1005 (*Hawkins*), FIG. 7 (excerpted).

122. The '720 Patent describes that "[w]hen the user selects a specific icon on the shortcut icon screen, a corresponding application is driven." Ex. 1001 (*'720Pat*), 4:49-51. In my opinion, a person of ordinary skill in the art would have understood that the description of a shortcut icon in *Hawkins* (for *launching* an application), is consistent with the meaning of a shortcut icon as described in the '720 Patent (where the user selects an icon so that the application may be *driven*), because in order for a user to be able to drive an application such that it is running, it must first be launched. I also note that the '720 Patent refers to "using shortcuts to *run* the applications," which is also consistent with a person of ordinary skill in the art's understanding, and *Hawkins*. *Id.*, 8:6-7.

123. Additionally, *Hawkins* also discloses that the user may create or edit favorites buttons for the applications stored on the mobile telephone, which are then displayed on the favorites pages. *Hawkins* discloses that the user may select an

"'Edit Favorites Button' from an onscreen menu," which presents a "dialog box" to the user "for performing button 701 configuration and/or editing." Ex. 1005 (*Hawkins*), 13:47-53, Figs. 11A-11B. Figures 11A and 11B (shown below with annotations) disclose a "**menu bar 1102**," which when selected "**is replaced by pop-up menu 1103**," which shows the "available applications" that "can be assigned" to a favorites "button 701." *Id.*, 16:51-17:2. In my opinion, a person of ordinary skill in the art would have readily understood that such available applications are "application programs installed in the mobile terminal," because in order for an application to be available for use on a mobile telephone, it must be installed on the device.

124. The "user can select from the applications shown in the menu," and hit an "**OK button**," which "accepts the user's entries and configures button 701 accordingly." *Id.* Once finished with the assignment, the "user is returned to the favorites view" on the display, which shows "the newly-added or edited button" with "focus." *Id.* Or, if the user wishes to cancel the assignment, "**button 907**" may be selected instead.

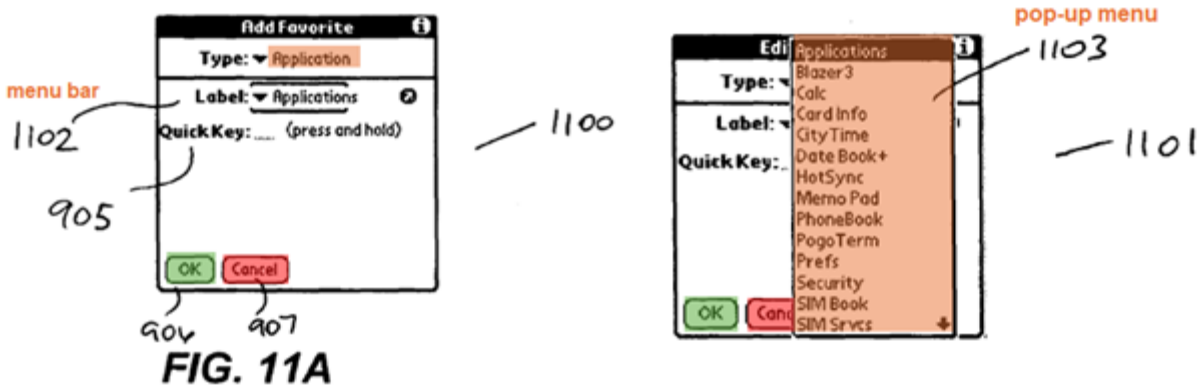


FIG. 11A

FIG. 11B

Ex 1005 (*Hawkins*), FIGs. 11A-11B (annotated).

125. Further, *Hawkins* discloses that the "user can rearrange buttons … from one location to another," and can "rearrange" "button 701 pages." *Id.*, 13:47-53. In my opinion, a person of ordinary skill in the art would have understood this disclosure to encompass the user's ability to associate a favorite button on any of *Hawkins*' screens with a particular application, and that *Hawkins*' multiple screens can be arranged in any order.

126. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches a method whereby a user selects ("… based on a selection from a user …") applications from those installed on the mobile telephone ("selecting application programs from application programs installed in the mobile terminal"), so that favorites buttons associated with those application programs are created and assigned to one of several pages displaying favorites buttons ("wherein each of the selected application programs is allocated to

one of the screens") so that the favorites buttons can be used to launch their respective application programs ("so that the screens present shortcut icons of the application programs allocated thereto").

c. 1[b] ("displaying, in the idle state, one of the screens as the idle screen on a display unit of the mobile terminal, wherein the displayed idle screen presents the shortcut icons corresponding to the application programs allocated thereto")

127. In my opinion, *Hawkins* in combination with *Majava* teaches this feature.

128. First, for the reasons I discussed in §XI.A.2.a., the *Hawkins-Majava* combination teaches "an idle screen to be displayed in an idle state of a mobile terminal."

129. Second, for the reasons I discussed in §XI.A.2.b, the *Hawkins-Majava* combination teaches that "each of the selected application programs is allocated to one of the screens so that the screens present shortcut icons of the application programs allocated thereto."

130. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches displaying on a mobile telephone's display unit the first page of favorites buttons after a given period of idle time has passed ("displaying, in the idle state, one of the screens as the idle screen on a display unit of the mobile terminal"), which includes favorites buttons for

launching each respective associated application ("wherein the displayed idle screen presents the shortcut icons corresponding to the application programs allocated thereto").

d. 1[c] ("displaying, in response to an idle screen switch request, a next one of the screens on the display unit according to an order of the screens")

131. In my opinion, *Hawkins* in combination with *Majava* teaches this feature.

132. First, for the reasons I discussed in §XI.A.2.a, the *Hawkins*-*Majava* combination teaches "an idle screen," and "a plurality of screens usable as the idle screen."

133. Second, *Hawkins* also discloses functionality that allows the user to navigate between its multiple "button 701 pages," including in numerical order 1 through 5, and reverse numerical order 5 through 1. For example, *Hawkins*' GUI "includes icons 203 for accessing additional banks of favorites buttons 701," and *Hawkins* discloses that the user can navigate between the "banks" or "pages" (including, for example, the five pages shown in Figure 7) in multiple ways. Ex. 1005 (*Hawkins*), 13:25-28; Fig. 7. These include "using the up/down/left/right controls on [a] five-way button" on the device, using a "keyboard" or other buttons on the device, and "using a stylus, finger, or other object," if the display "is touch-sensitive." *Id.*, 13:58-65, 5:39-55. *Hawkins* discloses additional details for the

functionalities of the device buttons used for page navigation. Here, the word "button" is used to refer both to "soft" buttons "displayed on screen 102," and physical buttons on the mobile telephone. *Id.*, 5:48-60, 6:4-1, 6:50-63, Fig. 1, Fig. 7. For example, Figure 1 shows a physical "five-way button 104." *Id.*, Fig. 1.

134. For example, in reference to the "soft" favorites buttons shown for the GUI in Figure 7, "any of the right-side buttons 701 has focus, and the user hits the right button, the next bank is displayed." *Id.*, 14:3-43. And if "the top-left button has focus," and "bank #1 was already being displayed," then "the last bank containing an assigned button is displayed." *Id.* Similarly, if "any of the left-side buttons 701 has focus, and the user hits the left button, the previous bank is displayed." *Id.*

135. Figure 7 of *Hawkins* depicts the GUI with five pages of favorites buttons, numbered 1 through 5. *Id.*, 13:25-28, Fig. 7. Thus, because the pages are presented in numerical order, and because the device's physical buttons and soft buttons may be used to navigate from a currently displayed bank, to a next bank or previous bank, a person of ordinary skill in the art would have understood that *Hawkins* discloses functionality for navigating between the pages in their numerical order. For example, if page 1 is currently displayed and the user navigates to the "next" page, the display would switch in numerical order to page 2. And if page 2 is currently displayed and the user navigates to the "previous" page, the display

would switch in reverse numerical order back to page 1. In both cases, whether moving to a next or a previous screen, the navigation occurs in numerical order of the pages.

136. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches in response to the user pressing a button, display, or keyboard to go to a next or previous page ("… in response to an idle screen switch request …"), navigating from the currently displayed favorites page to the next or previous favorites page, in numerical order of the available pages ("displaying … a next one of the screens on the display unit according to an order of the screens").

e. 1[d] ("setting a currently displayed screen as the idle screen to be displayed in the idle state")

137. In my opinion, *Hawkins* in combination with *Majava* teaches this feature.

138. *Hawkins* discloses functionality that allows the user to "rearrange buttons 701," including by "selecting a ***command for rearranging*** … button 701 ***pages***" into a different order. Ex. 1005 (*Hawkins*), 13:54-57. In my opinion, a person of ordinary skill in the art would have understood this aspect of *Hawkins* to teach that the user can rearrange the button "pages" such that any desired page could be designated as the first page, or the second page, or the last page, and so on. This is because, as I discussed above, the GUI shown in Figure 7 includes "five banks of

favorites buttons 701," which adds up to "a total of fifty buttons 701." *Id.*, 13:25-28, Fig. 7. However, each individual page only includes up to 10 buttons. *Id.*, Fig. 7. Thus, if a user wished to rearrange the buttons appearing on, *e.g.* the third page, to make those buttons accessible from the first page, rearranging the pages to make the former third page the new first page would accomplish that objective.

139. Additionally, *Hawkins* discloses functionality that allows the user to freely navigate between the five favorites pages shown in Figure 7. *Id.*, 13:25-28, 13:58-14:42, Fig. 7. Accordingly, whenever a user navigates to a given page, that page becomes the "currently displayed screen." And in my opinion, if a user desired to change the page designated as the first page, it would have been obvious to a person of ordinary skill in the art to select *Hawkins*' "***command*** for rearranging … button 701 pages," while the "currently displayed screen" is showing the page that the user wishes to make the new first page. This is because selecting the command while viewing the desired new first page would make it easier for the user to ensure that the correct page, with the correct buttons, was being accurately selected.

140. This would have been obvious to a person of ordinary skill in the art because functionality for setting a currently displayed screen as the idle screen was well known by 2006. For example, the *Wardimon* reference cited during prosecution of the '720 Patent relates to a mobile device user interface, and discloses functionality that "provides the user with the option to set ***any screen displayed*** on

mobile device 120 as the idle screen." Ex. 1009 (*Wardimon*), [0032]; *see also* §VII.B.2 (discussing *Wardimon*). In addition, *Wardimon* discloses a process for setting such idle screen whereby the user "***browse[s]*** through screens," and then "***select[s]*** a new screen to be displayed as the idle screen," which may include, *e.g.*, an SMS inbox, a calendar, or a phone book. *Id.*, [0032]-[0037], Figs. 1-2. Browsing through screens, and selecting the currently displayed screen as the idle screen in this manner, would allow the user to more easily understand which content was being designated as the idle screen, and confirm that the right information—e.g. the calendar, instead of a phone book—was selected.

141. Furthermore, for the reasons that I discussed in §XI.A.1 and §XI.A.2.a, in the *Hawkins-Majava* combination, if the currently displayed page 3 is selected as the new page 1, then the new page 1 would automatically be displayed after a given period of idle time. Thus, it would also be the new page 1 that is displayed in the idle state.

142. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches that the user may navigate to any of the favorites pages ("… a currently displayed screen …"), and teaches a command to allow the user to rearrange and set any of the pages (e.g., currently displayed page 3) as the first page ("setting a currently displayed screen as the idle screen to be displayed in the idle state").

f. 1[e] ("wherein the idle screen is displayed on the display unit with indicators corresponding to the screens, and")

143. In my opinion, *Hawkins* in combination with *Majava* teaches this feature.

144. *Hawkins* discloses a "screen 102, which may be a liquid crystal display (LCD) or other type of display for presenting output to the user," and discloses that its GUI shown as "display 700" in Figure 7 "also includes **icons 203 for accessing additional banks** of **favorites buttons 701**." Ex. 1005 (*Hawkins*), 5:36-39, 13:25-28, Fig. 7. The below annotated version of Figure 7 shows that when the first favorites page is displayed, the black highlighted "**1**" icon is displayed, and icons numbered 2 through 5 are also displayed, corresponding to the other four "banks." *Id.*

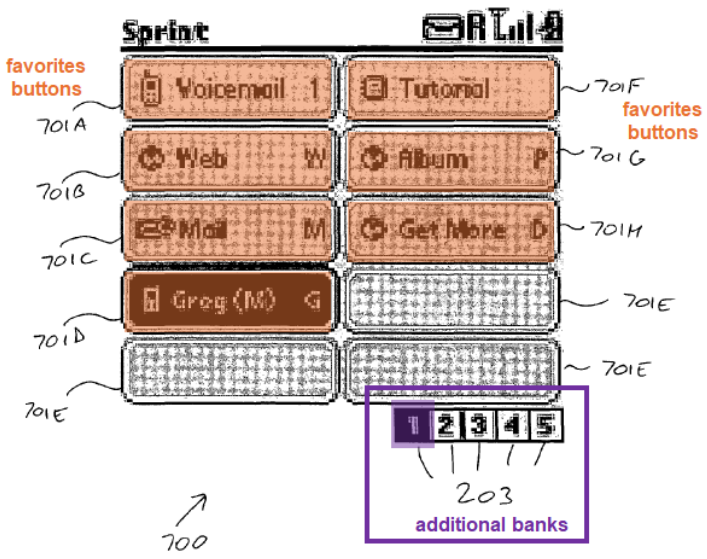


FIG. 7

Ex. 1005 (*Hawkins*), FIG. 7 (annotated).

145. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches displaying the first page of favorites buttons ("wherein the idle screen is displayed on the display unit") and also displaying icons numbered one through five, which correspond to the page displayed and the other four pages of favorites buttons ("with indicators corresponding to the screens").

g. 1[f] ("an indicator corresponding to the screen, which is set as the idle screen, is displayed distinguishably from the rest of the indicators.")

146. In my opinion, *Hawkins* in combination with *Majava* teaches this feature.

147. *Hawkins* discloses that its GUI shown in Figure 7 "also includes icons 203 for accessing additional banks of favorites buttons 701," which are numbered 1 through 5 and correspond to the "five banks of favorites buttons." Ex. 1005 (*Hawkins*), 5:36-39, 13:25-28, Fig. 7. In addition, *Hawkins* discloses that the icon for the first favorites page is displayed with a black highlighted box and a "1" icon, both of which distinguish the first page indicator from the rest of the indicators, which are different in color (white highlighted boxes) and number (icons numbered 2 through 5). *Id.*

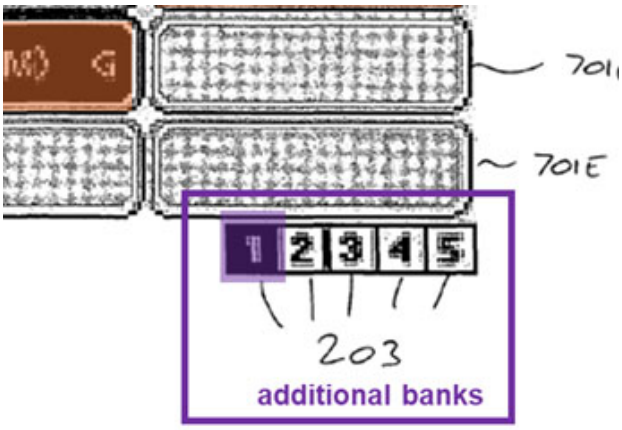


FIG. 7

Hawkins, FIG. 7 (annotated and excerpted).

148. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches that the first page of favorites buttons has an icon "1" ("an indicator corresponding to the screen, which is set as the idle screen") that is a distinguishable number and color, compared to the icons for the other four pages ("is displayed distinguishably from the rest of the indicators").

3. Claim 2 ("The method as claimed in claim 1, wherein the selecting comprises displaying, on the display unit, the shortcut icons of the application programs.")

149. In my opinion, *Hawkins* in combination with *Majava* teaches this claim.

150. *Hawkins* discloses functionality "for configuring a favorites button 701 as an application button." Ex. 1005 (*Hawkins*), 16:51-17:3 *Hawkins*' process also discloses that the user selects an application "from the applications shown in [a] menu," and by selecting the "OK button," the device "configures button 701

accordingly." *Id.*, 16:51-17:2. The display unit then "return[s] to the favorites" page screen, which displays "the newly-added or edited button." *Id.*

151. In my opinion, a person of ordinary skill in the art would have understood that the added/edited buttons are displayed on *Hawkins*' screen 102. *Id.* 5:36-39.

152. The user may also "rearrange" the "buttons" that are already included on a favorites page "from one location to another," including by "dragging" a button, or by "selecting a command for rearranging" the "pages." *Id.*, 13:54-57. In my opinion, a person of ordinary skill in the art would have understood this aspect of *Hawkins* teaches that a user could move a button from its current page to a different page because the Figure 7 example depicts 5 pages, each of which includes the same type of "favorites buttons 701." *Id.*, 13:25-28.

153. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins*-*Majava* combination teaches displaying on the mobile telephone's screen the favorites icons that can be selected to launch the associated applications ("wherein the selecting comprises displaying, on the display unit, the shortcut icons of the application programs").

4. Claim 3 ("The method as claimed in claim 1, wherein the idle screen switch request is inputted from a key button positioned on the mobile phone.")

154. In my opinion, *Hawkins* in combination with *Majava* teaches this claim.

155. *Hawkins* discloses a GUI with multiple "pages" or "banks" of favorites buttons, including in the example shown in Figure 7, five pages identified by icons numbered 1 through 5. Ex. 1005 (*Hawkins*), 13:25-28, Fig. 7. *Hawkins* also discloses that the user can navigate between the pages (including, for example, the five pages shown in Figure 7) in multiple ways. *Id*. These include "using the up/down/left/right controls on [a] five-way button," a "keyboard," and other physical buttons on the mobile telephone. *Id.*, 13:58-65, 5:39-55, 6:4-13. For example, Figure 1 shows a "five-way button 104." *Id.*, 6:54, Fig. 1. Specifically in reference to the example in Figure 7 (which shows "soft" favorites buttons 701), if "any of the right-side buttons 701 has focus, and the user hits the right button" of "five-way button 104," then "the next bank is displayed." *Id.*, 13:58-65, 14:3-43. Similarly, if "any of the left-side buttons 701 has focus, and the user hits the left button" of "five-way button 104," then the previous bank is displayed." *Id.*

156. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches navigating from the first page of favorites buttons to other pages of favorites buttons, using a key button on the mobile telephone ("wherein the idle screen switch request is inputted from a key button positioned on the mobile phone").

5. Claim 4 ("The method as claimed in claim 1, wherein the idle screen switch request is a leftward or rightward movement request.")

157. In my opinion, *Hawkins* in combination with *Majava* teaches this claim.

158. *Hawkins* discloses that the user can navigate between the pages "using the up/down/left/right controls on [a] five-way button" on the device (as shown in Figure 1 as "five-way button 104"). Ex. 1005 (*Hawkins*), 13:58-65, 5:39-55, 6:54, Fig. 1. In reference to the five banks of buttons shown in Figure 7 (*id.*, 13:25-28, Fig. 7), *Hawkins* further discloses that, for example, if "any of the right-side buttons 701 has focus, and the user hits the right button" of "five-way button 104," then the next bank is displayed." *Id.*, 14:3-43. Similarly, if "any of the left-side buttons 701 has focus, and the user hits the left button" of "five-way button 104," then the previous bank is displayed." *Id.* In my opinion, a person of ordinary skill in the art would have understood that hitting the right button corresponds to a rightward movement request, because hitting the right button switches the display to a bank with a higher number, which in the numerical order of the pages numbered 1 through 5 is to the right of the currently displayed page. Similarly, a person of ordinary skill in the art would have understood that hitting the left button corresponds to a leftward movement request, because hitting the left button switches the display to a bank with a lower number, which in the numerical order of the pages numbered 1 through 5 is to the left of the currently displayed page.

159. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches navigating to a page to the right of the current page by hitting the right button, and navigating to a page to the left of the current page by hitting the left button ("wherein the idle screen switch request is a leftward or rightward movement request")

6. Claim 5 ("The method as claimed in claim 1, wherein the idle screen switch request indicates whether the screens are switched either in an ascending or in a descending order.")

160. In my opinion, *Hawkins* in combination with *Majava* teaches this claim.

161. *Hawkins* discloses a GUI with multiple "pages" or "banks" of favorites buttons, including in the example shown in Figure 7, five pages identified by icons numbered 1 through 5, and discloses switching between the pages using, for example, "the up/down/left/right controls on [a] five-way button" to navigate to "next" and "previous" banks. Ex. 1005 (*Hawkins*), 13:25-28, 5:39-55, 6:54, 13:58-65, Fig. 1, Fig. 7. As I explained for claim 4, a person of ordinary skill in the art would understand *Hawkins* to teach that hitting the right button switches the display to a bank with a higher number, and hitting the left button switches the display to a bank with a lower number. *See* §XI.A.5. Thus, because the five banks in Figure 7 are ordered in numerical order 1 through 5, a person of ordinary skill in the art would have understood that navigating between the numbered pages also indicates whether

the page is switched in an ascending numerical order (i.e., 1-2-3-4-5), or descending numerical order (i.e., 5-4-3-2-1).

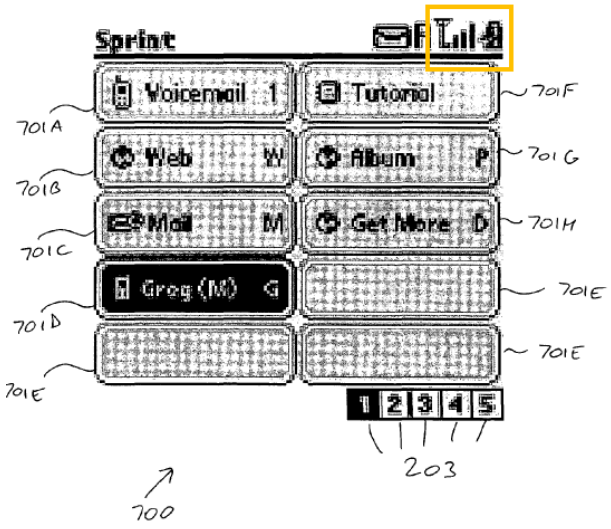
162. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches navigating between pages numbered 1 through 5, in either ascending or descending numerical order. ("wherein the idle screen switch request indicates whether the screens are switched either in an ascending or in a descending order").

7. Claim 6 ("The method as claimed in claim 1, wherein the screens display an operating condition of the mobile terminal in common, and the displayed operating condition comprises power utilization and radio wave reception strength.")

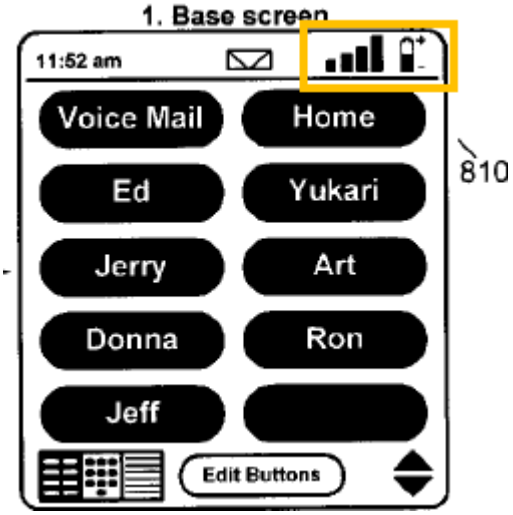
163. In my opinion, *Hawkins* in combination with *Majava* teaches this claim.

164. For example, in *Hawkins*' GUI, the screen with the page of favorites buttons shown in Figure 7 includes icons at the top of screen depicting a battery, and an antenna next to a series of bars. Ex. 1005 (*Hawkins*), Fig. 7; *see also id.*, Figs. 2-3. In my opinion, a person of ordinary skill in the art would have understood that the battery icon indicates the device's battery charge level, and the antenna with bars icon indicates the strength of the radio signal for the network that the mobile telephone is connected to (*e.g.*, cellular or similar). For example, *Hawkins* itself cites a patent that issued in 2003, with the same first named inventor (Jeffery C. Hawkins), which also discloses a mobile device with a GUI that is very similar to the GUI in Figure 7 of *Hawkins*. *See* Ex. 1005 (*Hawkins*), at p. 2, citing U.S. Patent

No. 6,516,202 (Ex. 1013 ("*Hawkins '202 Patent*")). In the *Hawkins '202 Patent*, the top of the GUI screen shown in Figure 8A also includes icons depicting a battery, and a series of bars. Ex. 1013 (*Hawkins '202 Patent*), Fig. 8A. The specification of the *Hawkins '202 Patent* explains that "the top" of the screen shown in Figure 8A displays "a signal strength indicator, and a battery strength indicator." *Id.*, 2:47-54, 7:12-17, 7:28-31. This demonstrates that at the time of the alleged invention of the '720 Patent in 2006, it was well known to a person of ordinary skill in the art that these types of icons were used in mobile telephone GUIs to indicate battery charge levels and radio signal strength. The figures from the two Hawkins references are shown side-by-side below, with annotations.



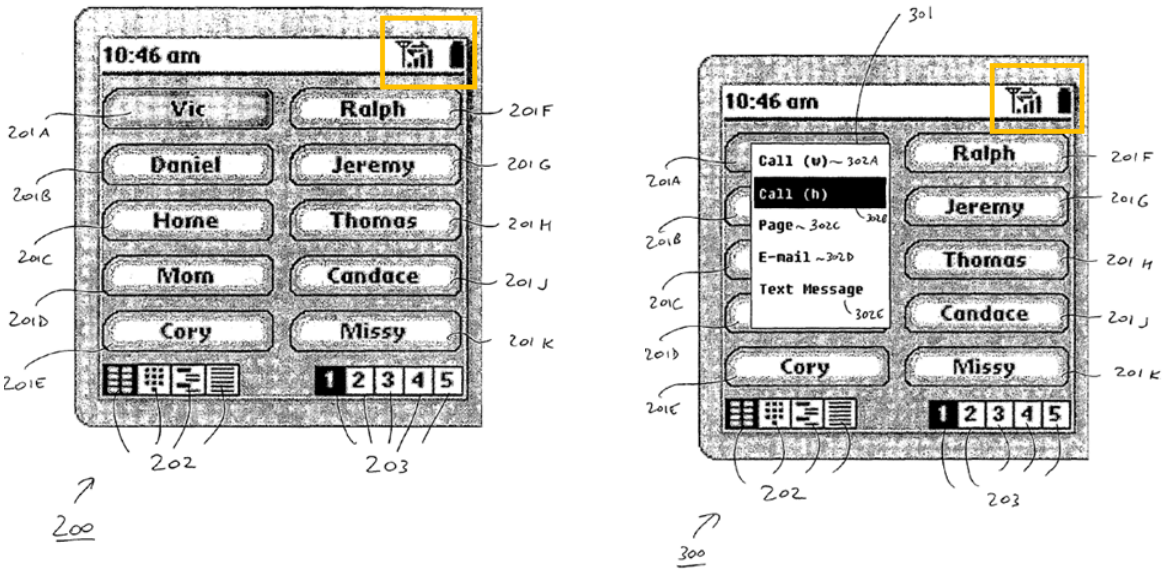
Ex. 1005 (*Hawkins*), FIG. 7 (annotated)



Ex. 1013 (*Hawkins '202 Patent*), FIG. 8A (excerpted and annotated)

165. In my opinion a person of ordinary skill in the art would have understood that *Hawkins*' disclosure of the battery and antenna/bars is not limited to displaying the icons only on the first page of favorites buttons, even though *Hawkins*

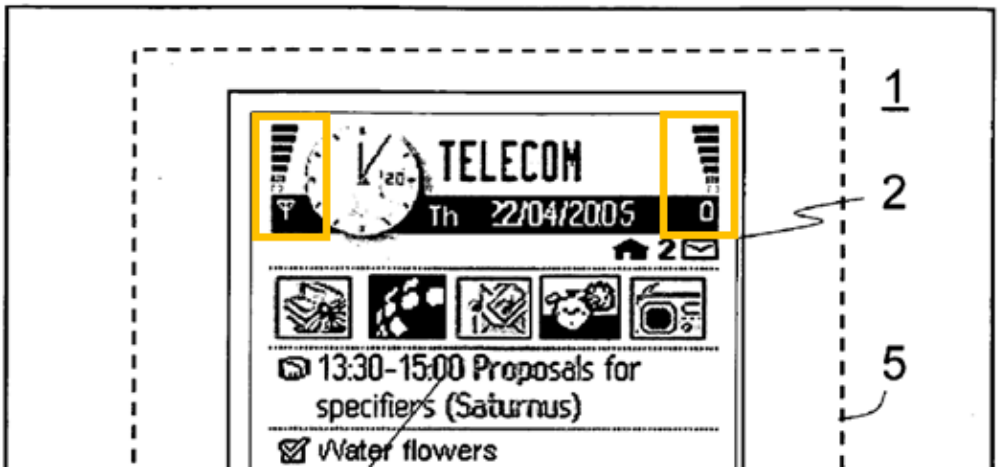
does not include figures showing the second through fifth pages. In addition to Figure 7, *Hawkins* depicts the same icons on, for example, screen shot 200 of speed dial favorites buttons shown in Figure 2, and screen shot 300 of a context sensitive menu 301 for selecting options related to a button in Figure 3. Ex. 1005 (*Hawkins*), 6:26-37, 7:6-13, Fig. 2, Fig. 3.



Ex. 1005 (*Hawkins*), FIGs. 2-3 (annotated).

166. Like *Hawkins*, *Majava* also discloses a mobile telephone GUI with "five different displays," numbered "AI page 1 to 5." Ex. 1006 (*Majava*), [0032], Fig. 2. *Majava* discloses that the pages include "indications of remaining battery charge and present signal strength," which are shown in the example page of Figure 1, and that "most essential operational information such as battery and field indications ***are advantageous to present on all pages***." *Id.*, [0025], [0034], Fig. 1. (I also note that from my experience in the art, a person of ordinary skill in the art

would have understood "field" strength and "signal" strength to have equivalent meanings.)



Ex. 1006 (*Majava*), FIG. 1 (excerpted and annotated).

167. Thus, in my opinion a person of ordinary skill in the art would have understood these aspects of *Majava* to teach that each of its AI pages numbered 1 through 5 display the same icons indicating remaining battery charge and signal strength, as those shown for the example page in Figure 1.

168. As I discussed above, a person of ordinary skill in the art would have been motivated to combine the teachings of *Hawkins* and *Majava* (*see* §XI.A.1), and in my opinion it would have been obvious to a person of ordinary skill in the art to incorporate *Majava*'s teachings into *Hawkins* GUI, such that the *Hawkins-Majava* combination showed the battery and antenna/bars indicator icons on the display when each of the five favorites pages are displayed, in the same manner that the icons are shown in Figure 7. This is because, as *Majava* explains, battery levels and

signal strength are "essential operational information" (*Majava*, [0034]), and a user would have the same need for receiving this information when viewing any favorites page.

169. In my opinion, combining these teachings also would have been obvious to a person of ordinary skill in the art because it would have entailed applying a known technique (*Majava*'s status indicator icons shown on every screen) to a known device (*Hawkins*' mobile user interface having multiple "button 701 pages) ready for improvement to yield predictable results (the *Hawkins-Majava* combination displaying the battery and antenna/bars icons on every "button 701 page").

170. The combination would further have been obvious to a person of ordinary skill in the art because it would have amounted to applying a known technique (*Majava*'s status indicator icons shown on every screen) to similar devices (*Hawkins*' mobile user interface which also displays the battery and antenna/bars icons on a "button 701 page") in the same way (the *Hawkins-Majava* combination displaying the battery and antenna/bars icons on every "button 701 page").

171. In my opinion, A person of ordinary skill in the art would also have had a reasonable expectation of success in implementing this combination, because *Hawkins*' GUI already includes functionality for displaying status indicator icons for the battery charge level and radio signal strength at the top of the screen,

including for the first page of favorites buttons, in a location that is distinct from the main portion of the screen and is not used for the favorites buttons (which explicitly are intended to change when the user switches pages). Merely maintaining this exiting feature, in the same readily-available location of the screen, for the additional pages of favorites buttons 2 through 5—as taught by *Majava*—would have been well within a person of ordinary skill in the art's skill because it would have amounted to nothing more than adding additional known functionality to *Hawkins*' existing mobile GUI.

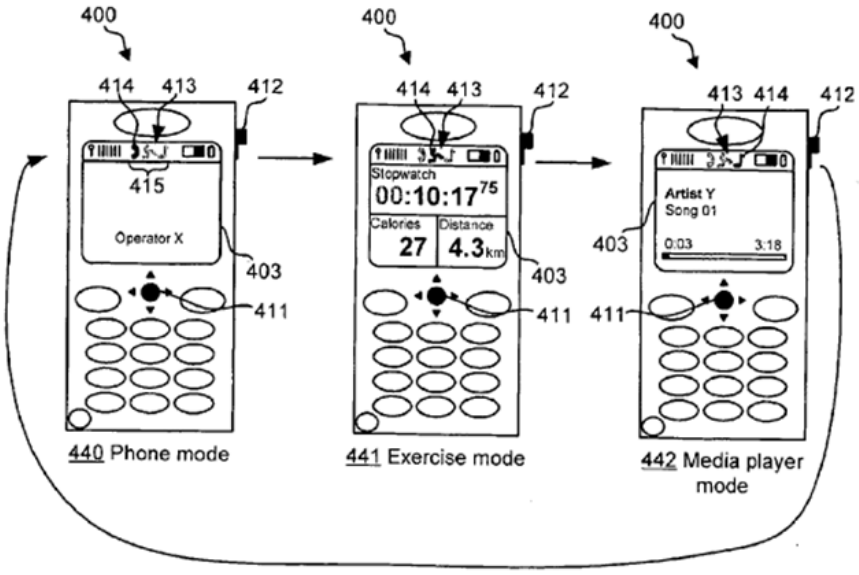
172. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches displaying icons indicating both the device's battery level, and the strength of a cellular (or similar) radio signal ("… displayed operating condition comprises power utilization and radio wave reception strength"), where those icons remain displayed when each page of favorites buttons is displayed ("wherein the screens display an operating condition of the mobile terminal in common …").

8. Claim 7 ("The method as claimed in claim 1, wherein the order of the screens is usable in a circular manner.")

173. In my opinion, *Hawkins* in combination with *Majava* teaches this claim.

174. While the '720 Patent specification does not use the exact term "circular manner," it does describe that the set of screens in its GUI may be "circulated." *E.g.*, Ex. 1001 (*'720Pat*), 7:32-38.

175. I note that during prosecution of the '720 Patent, the Examiner argued that *Nurmela* discloses "wherein the order of the screens is usable in a circular manner." Ex. 1004 (*'720FH*), at 095-097; Ex. 1010 (*Nurmela*), Fig. 4, [0053]. Specifically, *Nurmela* relates to a mobile device GUI, and in the relevant aspect includes three different "modes," each with a different display screen, including "phone mode," "exercise mode," and "media player mode," which can be "switched ***serially***." Ex. 1010 (*Nurmela*), [0053]. In reference to the three screens shown in Figure 4, *Nurmela* discloses that the user activates a "mode switch button" to move between the screens for the three modes. *Id.* If the user activates the "mode switch button" when viewing the third "media player mode," the device "loops back" to the first "phone mode," as indicated by the return arrow shown in Figure 4. *Id.*



Ex. 1010 (*Nurmela*), FIG. 4.

176. The applicant did not dispute the Examiner's understanding of *Nurmela*'s teaching relating to navigating screens "in a circular manner." Ex. 1004 (*'720FH*), at 067-068.

177. Thus, in my opinion, a person of ordinary skill in the art would have understood that "the order of the screens is usable in a circular manner" encompasses navigating a series of screens serially in a loop, such that moving forwards past the last screen returns the user to the first screen, and moving backwards from the first screen takes the user to the last screen.

178. In my opinion, *Hawkins* discloses this feature. In reference to the GUI shown in Figure 7, with five pages of favorites buttons, *Hawkins* discloses that "[i]f the top-left button 701 has focus" and "bank #1 was already being displayed," then "the last bank" is displayed if "the user hits the up button." Ex. 1005 (*Hawkins*), 14:5-11. Similarly, "[i]f the bottom-right button 701 has focus" and the "last bank containing an assigned button was already being displayed," then "the first bank" is displayed if "the user hits the down button." *Id.*, 14:19-25. In other words, the pages of favorites buttons in *Hawkins* can be navigated serially in a loop, such that when the user navigates forward from page 5 the display returns to page 1, and when the user navigates backwards from page 1 the display goes directly to page 5.

179. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches favorites pages that are

displayed serially in a loop when navigated, such that moving forward from the last page returns the display to the first page, and moving backward from the first page displays the last page ("wherein the order of the screens is usable in a circular manner").

9. Independent Claim 8

a. 8[Pre] ("A mobile terminal for setting an idle screen to be displayed in an idle state among a plurality of screens usable as the idle screen, the mobile terminal comprising:")

180. The preamble to Claim 8 of the '720 Patent recites "[a] mobile terminal for setting an idle screen to be displayed in an idle state among a plurality of screens usable as the idle screen, the mobile terminal comprising," and I have been asked to assume that the preamble is a claim limitation. Under that assumption, it is my opinion that *Hawkins* in combination with *Majava* teaches the preamble of Claim 8.

181. In my opinion, *Hawkins* in combination with *Majava* teaches "setting an idle screen to be displayed in an idle state among a plurality of screens usable as the idle screen," for the same reasons that I discussed in §XI.A.2.a.

182. In addition, *Hawkins* teaches that its GUI, as shown in Figure 7, "may be implemented on any communication device," including "mobile telephones, personal digital assistances (PDAs) . . . and the like." Ex. 1005 (*Hawkins*), 3:35-44, 13:10-12. The '720 Patent describes what was well known in the art as of 2006, which is that a "mobile terminal" includes various "multipurpose devices" that

"evolved" from early "generation cellular" telephones, and that are able to connect to voice and data networks, and "can provide various types of applications in addition to basic voice communication." Ex. 1001 (*'720Pat*), 1:35-65. Thus, a person of ordinary skill in the art would readily recognize that the mobile telephone described in *Hawkins* is a mobile terminal.

183. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches a mobile telephone ("mobile terminal") for setting a first page of favorites buttons, wherein the buttons correspond to applications on the mobile telephone and launch the applications when selected ("setting an idle screen"), as the page of buttons that is displayed after a given period of idle time ("to be displayed in an idle state"), wherein the first page is selected from among five pages of favorites buttons, any of which can be designated as the first page ("among a plurality of screens usable as the idle screen").

b. 8[a] ("a user interface configured to be operable by a user")

184. In my opinion, *Hawkins* in combination with *Majava* teaches this feature.

185. *Hawkins* discloses that its GUI, including as shown in Figure 7, is "a user interface display 700 including favorites buttons 701A through 701H," which the user can operate, including via "pressing button[s] 701." Ex. 1005 (*Hawkins*), 13:10-24, 13:40-53.

186. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches a user interface with favorites buttons that are pressed by the user ("a user interface configured to be operable by a user").

c. 8[b] ("a display unit")

187. In my opinion, *Hawkins* in combination with *Majava* teaches this feature.

188. *Hawkins* discloses that its mobile telephone "includes screen 102, which may be a liquid crystal display (LCD) or other type of display for presenting output to the user." Ex. 1005 (*Hawkins*), 5:36-39.

189. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches a display screen ("a display unit").

d. 8[c] ("a control unit configured to:")

190. In my opinion, *Hawkins* in combination with *Majava* teaches this feature.

191. *Hawkins* discloses that its mobile telephone includes a "general-purpose computer selectively activated or reconfigured by a computer program," that is configured for "performing the operations herein." Ex. 1005 (*Hawkins*), 18:43-55. In my opinion, a person of ordinary skill in the art would have understood

this aspect of *Hawkins* to teach a control unit, because a computer (which is known in the art to include various subcomponents including one or more processors, memory, etc.) and a computer program are the standard components that are used to run a mobile telephone, including its user interface software, and control its operations and functionalities. It was well-known and standard in the art as of 2006 to employ a computer and a computer program to provide computer-implemented functionalities. For example, the *Wardimon* reference cited during prosecution, which relates to a "user interface" for a "mobile device" (Ex. 1009 (*Wardimon*), Abstract), discloses that the device includes "hardware" components, including a "central processor unit (CPU)," and "software" components, including "system software" and "application software," where the hardware "comprises the machinery and equipment that provide an execution environment for the software." *Id.*, [0039]-[0051], Fig. 3A, Fig. 3B. *Wardimon* further discloses that the software comprises "a Graphical User Interface (GUI) for receiving user commands and data," and that "system and application software are implemented and executed on one or more hardware environments to allow a user customize the mobile device's idle screen." *Id.* Thus, a person of ordinary skill in the art would have readily recognized that *Hawkins'* computer and computer program also disclose the components that are used to run the *Hawkins* user interface software and installed applications, and control their functionalities.

192. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches "a control unit configured to" provide the functionalities recited in limitations 8[d]-8[i], for the reasons discussed in the next section.

e. 8[d]-8[i]

193. In my opinion, *Hawkins* in combination with *Majava* teaches limitations 8[d]-8[i] for the same reasons that I discussed in §§XI.A.2.b-XI.A.2.g, according to the table below.

Element	Section
8[d]	§XI.A.2.b
8[e]	§XI.A.2.c
8[f]	§XI.A.2.d
8[g]	§XI.A.2.e
8[h]	§XI.A.2.f
8[i]	§XI.A.2.g

10. Claim 9 ("The mobile terminal as claimed in claim 8, wherein the idle screen switch request is a leftward or rightward movement request.")

194. In my opinion, *Hawkins* in combination with *Majava* teaches this claim for the same reasons that I discussed in §XI.A.5 (Claim 4).

11. Claim 10 ("The mobile terminal as claimed in claim 8, wherein the idle screen switch request indicates whether the

screens are switched either in an ascending or in a descending order.")

195. In my opinion, *Hawkins* in combination with *Majava* teaches this claim for the same reasons that I discussed in §XI.A.6 (Claim 5).

12. Claim 11 ("The mobile terminal as claimed in claim 8, wherein the display unit is further configured to display at least one icon for indicating an operating condition of the mobile terminal and said at least one icon remains displayed even with the idle screen switch request, wherein the operating condition comprises at least one of power utilization, radio wave reception strength and time.")

196. In my opinion, *Hawkins* in combination with *Majava* teaches this claim.

197. First, I note that Claim 11 is similar to Claim 6. *See* §XI.A.7 (Claim 6). I have reproduced the relevant portions of both claims below, and annotated language directed to similar concepts in the same color:

Claim 11	Claim 6
… wherein the display unit is further configured to display at least one icon for indicating an operating condition of the mobile terminal and said at least one icon remains displayed even with the idle screen switch request, wherein the operating condition comprises at least	… wherein the screens display an operating condition of the mobile terminal in common, and the displayed operating condition comprises power utilization and radio wave reception strength.

one of power utilization, radio wave reception strength and time.	

198. As can be seen, while Claim 11 includes "time" as one of the operating conditions that may be displayed (which is not recited in Claim 6), it also recites displaying "at least one ***icon***," and recites displaying "***at least one of*** power utilization, radio wave reception strength and time." Thus, based on the plain claim language, in my opinion a person of ordinary skill in the art would have understood Claim 11 only requires displaying "**one** icon for indicating an operating condition," which can be any one of power utilization, radio wave reception strength, **or** time.

199. As I discussed for Claim 6 (*see* §XI.A.7), the *Hawkins-Majava* combination teaches displaying icons indicating both the mobile telephone's battery charge level, and the signal strength of a cellular (or similar) radio network, where those icons remain displayed when each page of favorites buttons is displayed. In addition, as I discussed in §XI.A.2.a, in the *Hawkins-Majava* combination the user interface is displayed on the mobile telephone's screen.

200. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches a screen ("display unit") that is configured to display battery and antenna/bars icons for indicating the charge level of the device's battery power source and the strength of the cellular (or similar) radio signal for the network, respectively (is further configured to display at least

one icon for indicating an operating condition of the mobile terminal … wherein the operating condition comprises at least one of power utilization, radio wave reception strength ..."), where those icons remain displayed when each page of favorites buttons is displayed ("and said at least one icon remains displayed even with the idle screen switch request").

13. Claim 12 ("The mobile terminal as claimed in claim 8, wherein the order of the screens is usable in a circular manner.")

201. In my opinion, *Hawkins* in combination with *Majava* teaches this claim for the same reasons that I discussed in §XI.A.8 (Claim 7).

14. Independent Claim 13

a. 13[Pre] ("A non-transitory computer-readable recording medium for storing a program for setting an idle screen to be displayed in an idle state of a mobile terminal among a plurality of screens usable as the idle screen, wherein the program, when executed by the mobile terminal, instructs the mobile terminal to perform:")

202. The preamble to Claim 13 of the '720 Patent recites "[a] non-transitory computer-readable recording medium for storing a program for setting an idle screen to be displayed in an idle state of a mobile terminal among a plurality of screens usable as the idle screen, wherein the program, when executed by the mobile terminal, instructs the mobile terminal to perform," and I have been asked to assume that the preamble is a claim limitation. Under that assumption, it is my opinion that *Hawkins* in combination with *Majava* teaches the preamble of Claim 13.

203. In my opinion, *Hawkins* in combination with *Majava* teaches "setting an idle screen to be displayed in an idle state of a mobile terminal among a plurality of screens usable as the idle screen," for the same reasons that I discussed in §XI.A.2.a.

204. In addition, *Hawkins* teaches that its "user interface" or GUI, including as shown in Figure 7, "may be implemented on any communication device," which runs "a computer program" that "perform[s] the operations," and which "may be stored in a computer readable storage medium," including "any type of media suitable for storing electronic instructions." Ex. 1005 (*Hawkins*), 3:35-44, 13:10-12, 18:43-55.

205. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins*-*Majava* combination teaches a program stored in a mobile telephone's computer readable storage medium, and executed by that mobile telephone, to perform the operations of ("[a] non-transitory computer-readable recording medium for storing a program … wherein the program, when executed by the mobile terminal, instructs the mobile terminal to perform") setting a first page of favorites button, wherein the buttons correspond to applications on the mobile telephone and launch the applications when selected ("… setting an idle screen"), as the page of buttons that is displayed after a given period of idle time ("to be displayed in an idle state of a mobile terminal"), wherein the first page is selected from among

five pages of favorites buttons, any of which can be designated as the first page ("among a plurality of screens usable as the idle screen …").

b. 13[a]-13[f]

206. In my opinion, *Hawkins* in combination with *Majava* teaches limitations 13[a]-13[f] for the same reasons that I discussed in §§XI.A.2.b-XI.A.2.g, according to the table below.

Element	Section
13[a]	§XI.A.2.b
13[b]	§XI.A.2.c
13[c]	§XI.A.2.d
13[d]	§XI.A.2.e
13[e]	§XI.A.2.f
13[f]	§XI.A.2.g

15. Claim 14 ("The non-transitory computer-readable recording medium as claimed in claim 13, wherein the idle screen switch request is a leftward or rightward movement request.")

207. In my opinion, *Hawkins* in combination with *Majava* teaches this claim for the same reasons that I discussed in §XI.A.5 (Claim 4).

16. Claim 15 ("The non-transitory computer-readable recording medium as claimed in claim 13, wherein the screens display an operating condition of the mobile terminal in common, and the displayed operating condition comprises at least one

of power utilization, radio wave reception strength and time.")

208. In my opinion, *Hawkins* in combination with *Majava* teaches this claim.

209. First, I note that Claim 15 is similar to Claim 6. *See* §XI.A.7 (Claim 6). I have reproduced the relevant portions of both claims below, and annotated language directed to similar concepts in the same color:

Claim 15	Claim 6
… wherein screens display an operating condition of the mobile terminal in common, and the displayed operating condition comprises at least one of power utilization, radio wave reception strength and time.	… wherein the screens display an operating condition of the mobile terminal in common, and the displayed operating condition comprises power utilization and radio wave reception strength.

210. As can be seen, while claim 15 includes "time" as one of the operating conditions that may be displayed (which is not recited in claim 6), it also recites displaying "***at least one of*** power utilization, radio wave reception strength and time." Thus, based on the plain claim language, in my opinion a person of ordinary skill in the art would have understood Claim 15 requires that only one icon be displayed and that the icon can be any one of power utilization, radio wave reception **or** time.

211. As I discussed for Claim 6, the *Hawkins-Majava* combination teaches displaying icons indicating both the mobile telephone's battery charge level, and the signal strength of a cellular (or similar) radio network, where those icons remain displayed when each page of favorites buttons is displayed. *See* §XI.A.7.

212. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava* combination teaches displaying icons indicating both the device's battery level, and the strength of a cellular (or similar) radio signal ("… displayed operating condition comprises at least one of power utilization, radio wave reception strength …"), where those icons remain displayed when each page of favorites buttons is displayed ("wherein the screens display an operating condition of the mobile terminal in common …").

17. Claim 16 ("The non-transitory computer-readable recording medium as claimed in claim 13, wherein the order of the screens is usable in a circular manner.")

213. In my opinion, *Hawkins* in combination with *Majava* teaches this claim for the same reasons that I discussed in §XI.A.8 (Claim 7).

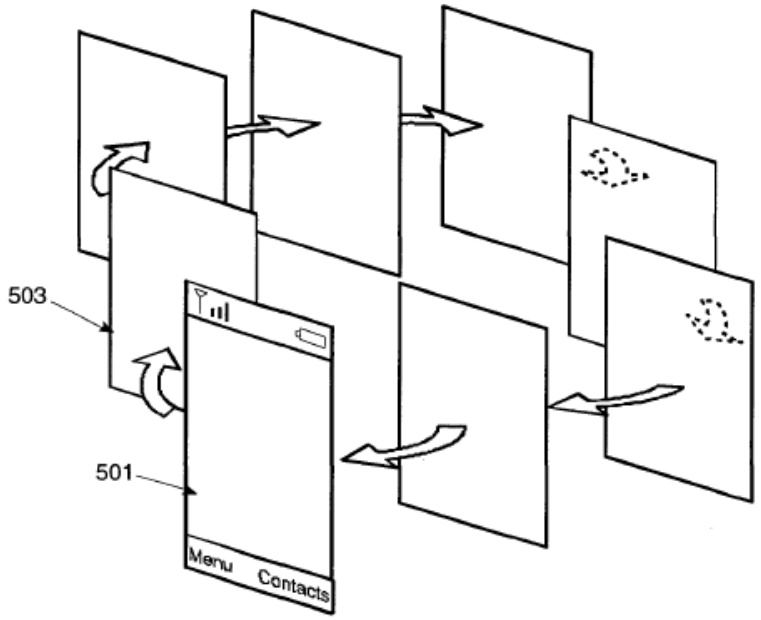
B. Ground 2: *Hawkins* In Combination With *Majava* and *Nielsen* Renders Obvious Claims 7, 12, And 16

1. Claim 7 ("The method as claimed in claim 1, wherein the order of the screens is usable in a circular manner.")

214. In my opinion, *Hawkins* in combination with *Majava* teaches this claim for the same reasons that I discussed in §XI.A.8 (Claim 7).

215. However, if the Patent Owner argues and the Board finds that the *Hawkins-Majava* combination does not teach "wherein the order of the screens is usable in a ***circular manner***," then in my opinion this claim is also taught by the *Hawkins-Majava* combination in combination with *Nielsen*.

216. *Nielsen* relates to a mobile device GUI with functionality that allows a user to "switch the display from a home screen, shown while the mobile device is idle, to a glance screen," which contains different "data." Ex. 1007 (*Nielsen*), Abstract. Specifically, *Nielsen* discloses a series of "glance module" screens that are "serially accessible" (as depicted in Figure 5), meaning that one screen is "initially displayed," and that the user may navigate through the other screens "until the desired glance module is presented," at which point the user may stop and view the selected screen. *Id.*, [0030], Fig. 5. In other words, as the user navigates through the screens, "the display would serially cycle through each" screen. *Id.*



Ex. 1007 (*Nielsen*), FIG. 5.

217. As I discussed in §XI.A.8, in my opinion a person of ordinary skill in the art would have understood that "the order of the screens is usable in a circular manner" as used in this claim encompasses navigating a series of screens serially in a loop, such that moving forwards past the last screen returns the user to the first screen, and moving backwards from the first screen takes the user to the last screen. *Nielsen's* example depicted in Figure 5, for instance, shows eight glance screens that may be navigated serially, such that when the user reaches the eighth screen, navigating forward again will return the user directly to the first screen. Thus, because the glance screens in *Nielsen* may be navigated serially in a loop, a person of ordinary skill in the art would have understood *Nielsen* to teach screens that are "usable in a circular manner."

218. In my opinion, a person of ordinary skill in the art would have been motivated to incorporate *Nielsen*'s teachings for navigating through a series of screens, into the mobile telephone of the *Hawkins-Majava* combination. First, *Nielsen* discloses functionality that allows a user to navigate directly back to the first screen when viewing the last screen in a series of screens, without having to view all of the intervening screens to get there. Ex. 1007 (*Nielsen*), [0030], Fig. 5. Similarly, *Nielsen*'s functionality allows the user to navigate from the first screen directly to the last screen (if desired), without having to navigate forward through all of the intervening screens to get there. *Id.* In my opinion, a person of ordinary skill in the art would have recognized that incorporating this teaching from *Nielsen* into the *Hawkins-Majava* combination would have advanced *Hawkins*' stated goal of implementing a user interface that "provides easy access" to "buttons" associated with desired "features" of "communication devices" (Ex. 1005 (*Hawkins*), 2:38-48), and would have allowed the user to navigate between screens faster and more efficiently.

219. In my opinion, this combination also would also have been obvious to a person of ordinary skill in the art because it would have amounted to nothing more than applying a known technique (*Nielsen*'s technique for serially cycling through displayed screens in a loop) to a known device (*Hawkins-Majava*'s mobile telephone having a user interface with a series of screens that can be navigated) ready for

improvement to yield predictable results (the mobile telephone of the *Hawkins-Majava-Nielsen* combination having a user interface with a series of screens that can be navigated serially in a loop).

220. The combination would have also been obvious to a person of ordinary skill in the art because it would have amounted to applying a known technique (*Nielsen*'s technique for serially cycling through displayed screens in a loop) to similar devices (*Hawkins-Majava*'s mobile telephone having a user interface with a series of screens that can be navigated) in the same way (the mobile telephone of the *Hawkins-Majava-Nielsen* combination having a user interface with a series of screens that can be navigated serially in a loop).

221. In my opinion, A person of ordinary skill in the art also would also have had a reasonable expectation of success in implementing this combination, because the mobile telephone and GUI of the *Hawkins-Majava* combination already includes a series of pages that can be freely navigated in both the backwards and forwards directions. *E.g.*, Ex. 1005 (*Hawkins*), 13:58-14:50. Implementing *Nielsen*'s teaching to "serially cycle" through the displayed pages in *Hawkins* would have amounted to adding additional known functionality to a pre-existing mobile telephone GUI, which already included multi-directional navigation. Such implementation would have been well within the capabilities of a person of ordinary skill in the art, because it would have required only minor modifications to the

software running the *Hawkins* user interface, which already included features for displaying a series of pages and for allowing a user to navigate freely between the pages.

222. Accordingly, in my opinion a person of ordinary skill in the art would have understood the *Hawkins-Majava-Nielsen* combination teaches serially cycling through displayed favorites pages, such that moving forward from the last page returns the display to the first page, and moving backward from the first page displays the last page ("wherein the order of the screens is usable in a circular manner").

2. Claim 12 ("The mobile terminal as claimed in claim 8, wherein the order of the screens is usable in a circular manner.")

223. In my opinion, the *Hawkins-Majava-Nielsen* combination teaches this claim for the same reasons that I discussed in §XI.B.1.

3. Claim 16 ("The non-transitory computer-readable recording medium as claimed in claim 13, wherein the order of the screens is usable in a circular manner.")

224. In my opinion, the *Hawkins-Majava-Nielsen* combination teaches this claim for the same reasons that I discussed in §XI.B.1.

XII. SECONDARY CONSIDERATIONS

225. I am not aware of any evidence in the '720 Patent's prosecution history or elsewhere, that supports any arguments related to secondary considerations of non-obviousness, or any evidence of an alleged nexus between such alleged evidence and the challenged claims. *See generally* Ex. 1004 ('*720FH*). If Patent Owner identifies the existence of any evidence for alleged secondary considerations, I reserve the right to address it at the appropriate time in these proceedings.

I declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on: April 22, 2025