

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.;
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner

v.

SLYDE ANALYTICS, LLC
Patent Owner.

Case No. IPR2024-00002
U.S. Patent No. 9,651,922

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,651,922**

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LIST OF EXHIBITS¹

Ex. No.	Description
Ex-1001	U.S. Patent No. 9,651,922 (“the ’922 Patent”)
Ex-1002	Declaration of Dr. Benjamin Bederson
Ex-1003	Curriculum Vitae of Dr. Benjamin Bederson
Ex-1004	Prosecution History of the ’922 Patent (Application No. 13/334,823)
Ex-1005	U.S. Patent Application Publication No. 2008/0168368 (“Louch”)
Ex-1006	U.S. Patent Application Publication No. 2006/0097991 (“Hotelling”)
Ex-1007	U.S. Patent No. 6,449,219 (“Hepp”)
Ex-1008	Linux Watch, https://researcher.watson.ibm.com/researcher/view_group_subpage.php?id=6102 (last visited Sept. 29, 2023).
Ex-1009	U.S. Patent No. 4,165,575 (“Neilsen”)
Ex-1010	U.S. Patent No. 8,296,684 (“Duarte”)
Ex-1011	U.S. Patent Application Publication No. 2008/0062207 (“Park”)
Ex-1012	U.S. Patent No. 6,714,486 (“Biggs”)
Ex-1013	Howard Anton, <i>Calculus</i> (2nd ed. 1984)
Ex-1014	U.S. Patent No. 8,344,998 (“Fitzgerald”)
Ex-1015	Haptic, https://www.merriam-webster.com/dictionary/haptic (last visited Sept. 27, 2023).

¹ Four-digit pin citations that begin with 0 are to the branded numbers added by Samsung in the bottom right corner of the exhibits. All other pin citations are to original page, column, paragraph, or line numbers.

Ex. No.	Description
Ex-1016	Active-matrix liquid-crystal display, https://en.wikipedia.org/wiki/Active-matrix_liquid-crystal_display (last visited Sept. 27, 2023).
Ex-1017	Display device, https://en.wikipedia.org/wiki/Display_device (last visited Sept. 27, 2023).
Ex-1018	Palm (PDA), https://en.wikipedia.org/wiki/Palm_(PDA) (last visited Sept. 27, 2023).
Ex-1019	U.S. Patent Application Publication No. 2009/0199241 (“Unger”)
Ex-1020	Claim Mapping Table
Ex-1021	Chandra Narayanaswami et al., IBM’s Linux Watch: The Challenge of Miniaturization 33-41 (2002).
Ex-1022	U.S. Patent Application Publication No. 2009/0199130 (“Tsern”)
Ex-1023	Benjamin B. Bederson & James D. Hollan, Pad++: A Zooming Graphical Interface for Exploring Alternate Interface Physics 17-26 (1994).
Ex-1024	David Rogers, Feimo Hou, Chandelle Vuolo & Benjamin B. Bederson, Tossing Objects in a Desktop Environment (1996).
Ex-1025	Benjamin B. Bederson, Fisheye Menus 217-225 (2000)
Ex-1026	Leslie E Chipman, Benjamin B. Bederson & Jennifer A. Golbeck, SlideBar: Analysis of a linear input device 1-9 (2004).
Ex-1027	Hilary Browne et al., Designing a Collaborative Finger Painting Application for Children (2000).
Ex-1028	Pekka Parhi, Amy K. Karlson & Benjamin B. Bederson, Target Size Study for One-Handed Thumb Use on Small Touchscreen Devices 203-210 (2006).
Ex-1029	Amy K. Karlson, Benjamin B. Bederson & José Contreras-Vidal, Understanding One-Handed Use of Mobile Devices 1-22 (2007).

Ex. No.	Description
Ex-1030	Test of Time Awards, https://ieevis.org/year/2021/info/awards/test-of-time-awards (last visited Oct. 3, 2023).
Ex-1031	Test of Time Awards, https://ieevis.org/year/2022/info/awards/test-of-time-awards (last visited Oct. 3, 2023).
Ex-1032	Takeo Igarashi & Ken Hinckley, Speed-dependent Automatic Zooming for Browsing Large Documents 139-148 (2000).
Ex-1033	U.S. Patent Application Publication No. 2008/0316183 (“Westerman”)

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc (collectively, “Petitioner”) request *inter partes* review (“IPR”) of Claims 1-24 of U.S. Patent No. 9,651,922 (“the ’922 Patent”) (Ex-1001), currently assigned to Slyde Analytics LLC (“PO”).

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

Real Parties-in-Interest: Petitioner identifies the following real parties-in-interest: Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.

Related Matters: PO has asserted the ’922 Patent against Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. in *Slyde Analytics LLC v. Samsung Electronics Co., Ltd., et al.*, Case No. 2-23-cv-00083 (E.D. Tex.); PO has also asserted the ’922 Patent against Zepp Health Corporation in *Slyde Analytics LLC v. Zepp Health Corp.*, Case No. 2-23-cv-00172 (E.D. Tex.).

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III. FEE AUTHORIZATION

The PTO is authorized to charge any fees due during this proceeding to Deposit Account No. LA500639.

IV. GROUNDS FOR STANDING

Petitioner certifies that the '922 Patent is available for review, and Petitioner is not barred or estopped from requesting review.

V. PRECISE RELIEF REQUESTED

Petitioner requests review and cancellation of Claims 1-24 as unpatentable based on the following grounds, supported by a declaration from Dr. Benjamin B. Bederson. Ex-1002; Ex-1003.

Ground	Summary
1	Claims 1-4, 6-19, and 21-24 are obvious over Louch (Ex-1005)
2	Claims 5 and 20 are obvious over Louch and Hepp (Ex-1007)
3	Claims 8, 13-17, 21, 22, and 24 are obvious over Louch and Duarte (Ex-1010).
4	Claim 23 is obvious over Louch and Park (Ex-1011).

Ground	Summary
5	Claims 1-13 and 17-24 are obvious over Duarte, Biggs (Ex-1012), and Hotelling (Ex-1006).
6	Claims 14-16 are obvious over Duarte, Biggs, Hotelling, and Louch.

VI. THE CHALLENGED PATENT

The '922 Patent is directed to a watch with a touchscreen, which was admittedly well-known in the art. Ex-1001, 1:25-57, 2:15-17. The claimed watch displays “cards,” or widgets (*id.*, 4:16-32), organized in rows and/or columns, wherein the touchscreen enabled a user to scroll through the cards in a horizontal or vertical direction, as illustrated in Figure 2 below. *Id.*, 7:14-20.

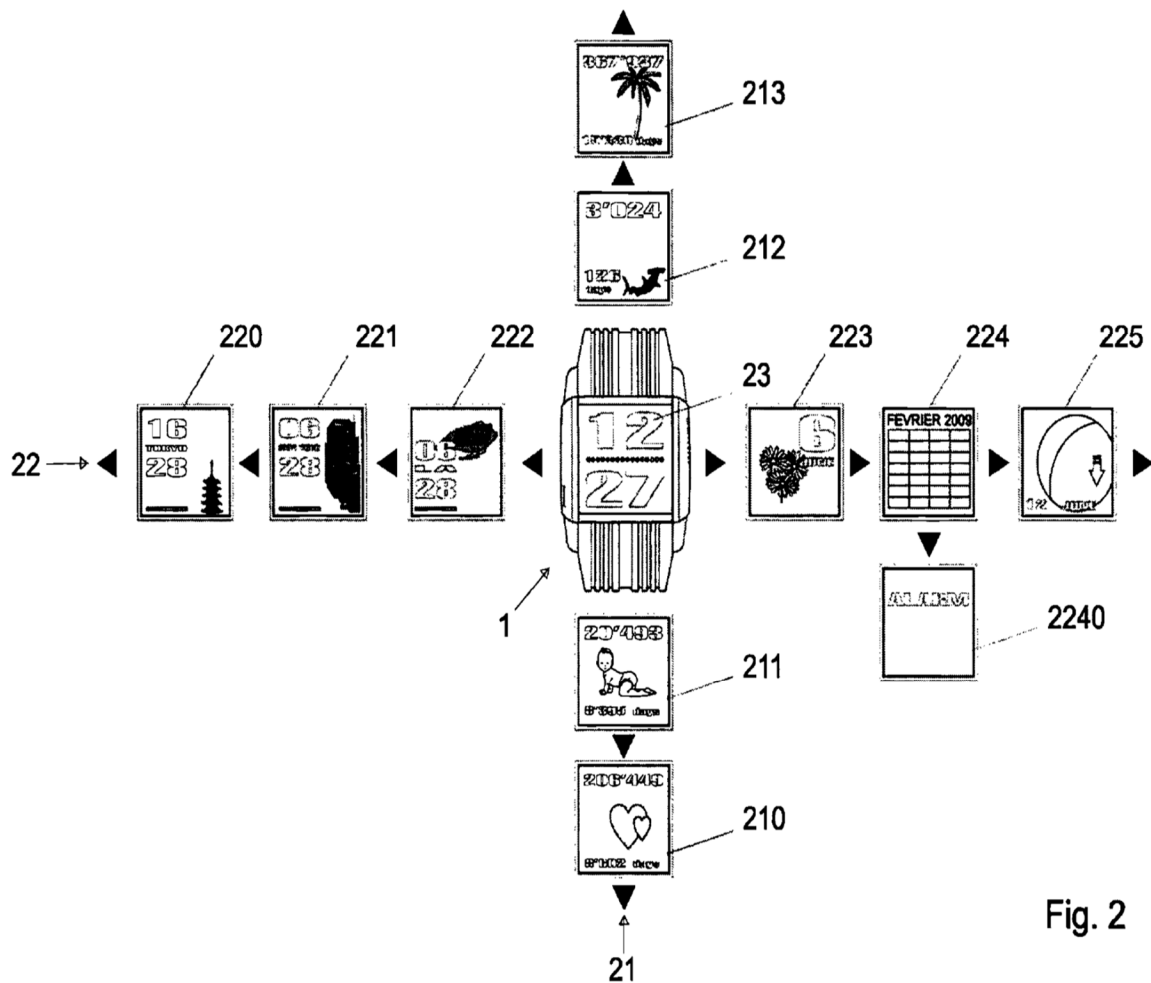


Fig. 2

This technique for organizing and navigating through widgets on a touchscreen was well-known in the art. Ex-1002, ¶¶51-59, 136-38.

VII. PROSECUTION HISTORY OF THE '922 PATENT

The '922 Patent was filed December 22, 2011, as a continuation of international application PCT/EP2010/059323 filed June 30, 2010. It claims priority to Swiss application CH2009/1036, filed July 3, 2009.

This Petition presents arguments and prior art not considered during prosecution. Ex-1002 ¶¶49. There is no basis to preclude considering them in the first instance under 35 U.S.C. §325(d).

VIII. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art at the relevant time (“POSITA”) would have had a bachelor’s degree in electrical engineering, computer science, computer engineering, or a related field, and 2-3 years of experience in the research, design, development, or testing of graphical user interfaces, touchscreens, and mobile devices, with additional education substituting for experience and vice-versa. Ex-1002 ¶¶37-38.

IX. PRIORITY DATE

For purposes of this proceeding only, Petitioner assumes the ’922 Patent is entitled to its earliest alleged priority date (July 3, 2009) and thus applies pre-AIA 35 U.S.C. §102.

X. CLAIM CONSTRUCTION

Petitioner interprets the claims according to *Phillips*. 37 C.F.R. §42.100(b). To resolve this Petition, Petitioner does not believe any term requires construction.²

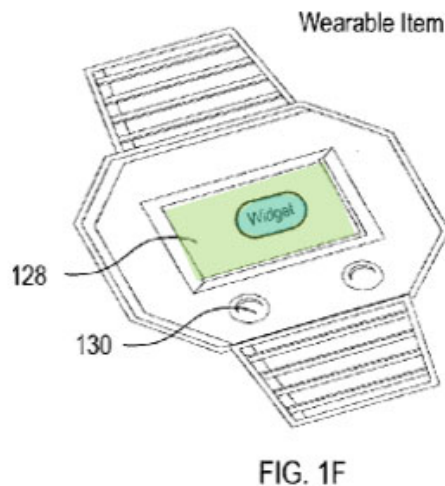
² District court claim construction procedures have not yet begun. Petitioner reserves all rights to raise claim construction and other arguments in district court.

XI. BRIEF DESCRIPTION OF THE APPLIED PRIOR ART

A. Louch (Ex-1005)

Louch (U.S. Pat. Pub. 2008/0168368A1) was filed on January 7, 2007, and published on July 10, 2008. Louch qualifies as prior art at least under 35 U.S.C. § 102(a) and (e). Louch incorporates by reference Hotelling (Ex-1006), which was published May 11, 2006, and is §102(b) prior art.

Louch discloses “a digital watch” with a touch sensitive display area 128 that can display a dashboard/widget, as shown in Figure 1F. Ex-1005 ¶49.



A widget “can consume the entire display area 406.” Ex-1005 ¶67.

Additionally, Petitioner will request leave to submit the district court’s claim construction as soon as it becomes available.

And a user can move a finger horizontally or vertically across the touchscreen to scroll through available widgets to find a desired widget, as shown in Figure 5b. Ex-1005 ¶¶79, 80.

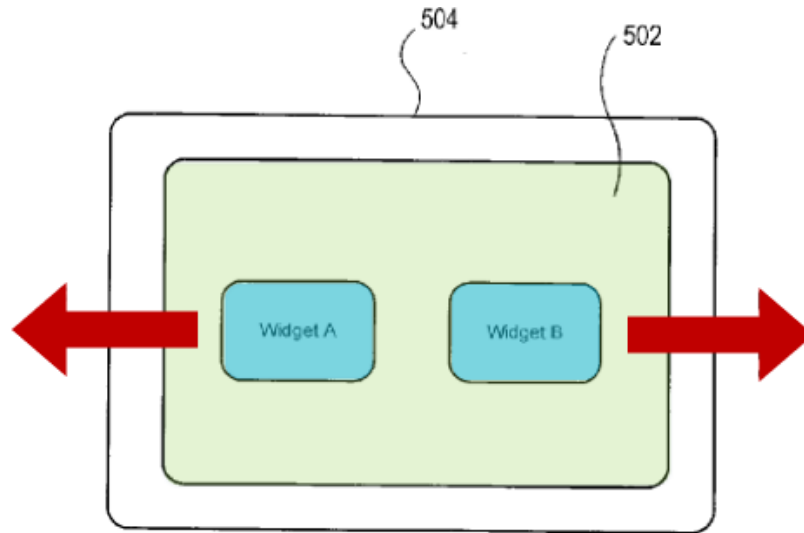


FIG. 5B

B. Hepp (Ex-1007)

Hepp (U.S. Patent No. 6,449,219) issued on September 10, 2002, and is §102(b) prior art.

Hepp displays the time on a touchscreen by simulating a mechanical watch with clock hands, as shown in Figure 1. Ex-1007, 4:55-58, 6:27-31, 6:66-7:5.

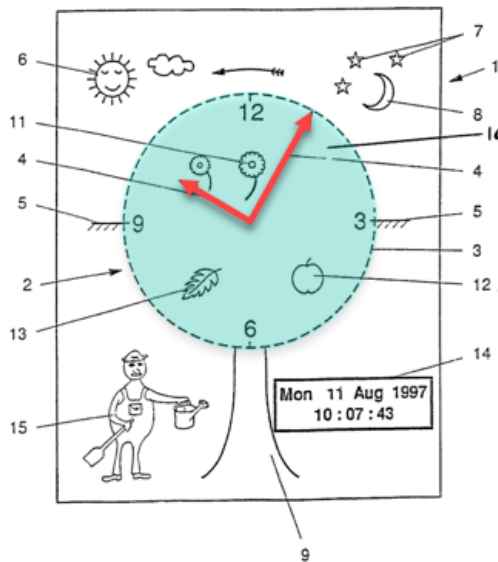


Fig. 1

C. Duarte (Ex-1010)

Duarte (U.S. Patent No. 8,296,684) was filed on May 23, 2008, and issued on October 23, 2012. It is §102(e) prior art.

Duarte describes touchscreens on small devices that users can swipe horizontally or vertically to move cards (called windows 301) organized in rows and/or columns. Ex-1010, 6:59-7:17, 7:44-8:4. Windows 301 can be scrolled in full-screen mode, in which the windows 301 fill the entire touchscreen display. *Id.*, 6:59-63. Windows 301 can automatically snap into position upon completion of the scrolling. *Id.*, 7:6-10. Windows 301 may be scrolled in a closed loop such that a last window 301 returns to the first during scrolling. *Id.*, 8:17-22.

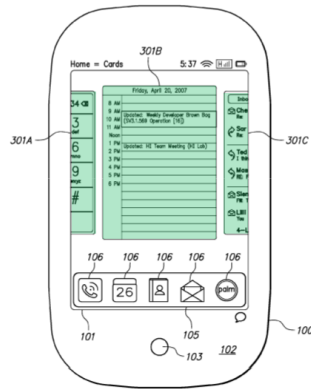


FIG. 3

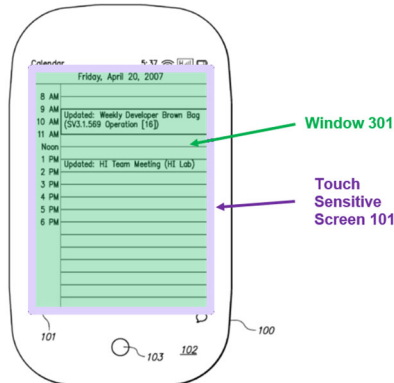


FIG. 2

D. Park (Ex-1011)

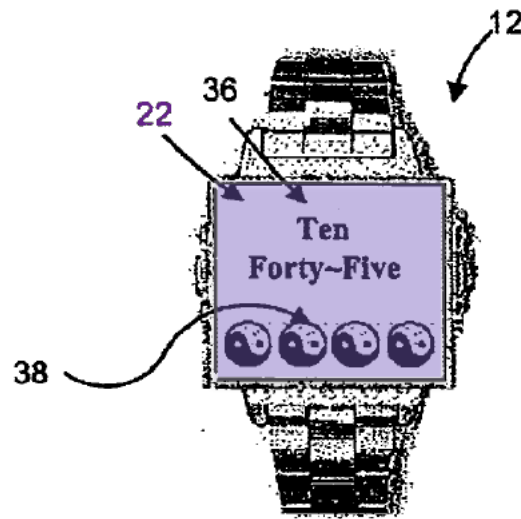
Park (U.S. Patent Publication No. 2008/0062207) was published on March 13, 2008, and is §102(b) prior art.

Park discloses a portable device with a touchscreen a user can swipe to scroll through cards (called pages). Ex-1011 ¶34. The cards can be scrolled one page at a time. Ex-1011 ¶44, 55.

E. Biggs (Ex-1012)

Biggs (U.S. Patent No. US 6,714,486) was issued on March 30, 2004 and is §102(b) prior art.

Biggs discloses a wristwatch with a touch-sensitive LCD display that allows a user to select various user-customizable displays for indicating the time. Ex-1012, 3:52-56, 3:64-66, 8:41-46, 9:7-16.



F. Hotelling (Ex-1006)

Hotelling (U.S. Patent Pub. No. 2006/0097) was published May 11, 2006, and is §102(b) prior art.

Hotelling describes a multipoint touchscreen 36 allowing a user to interact with a graphical user interface on display 34, as shown below in Figure 2. Ex-1006 ¶37.

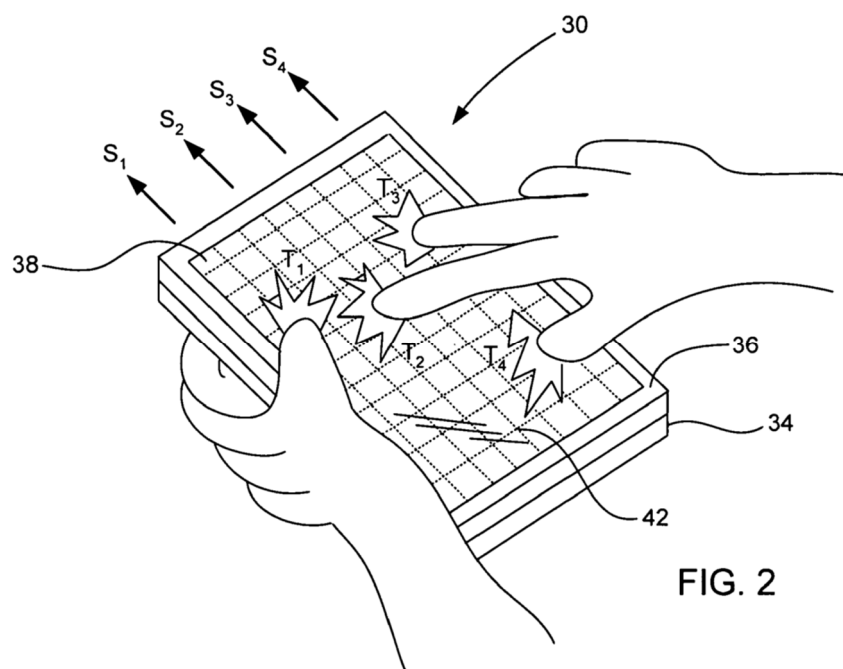
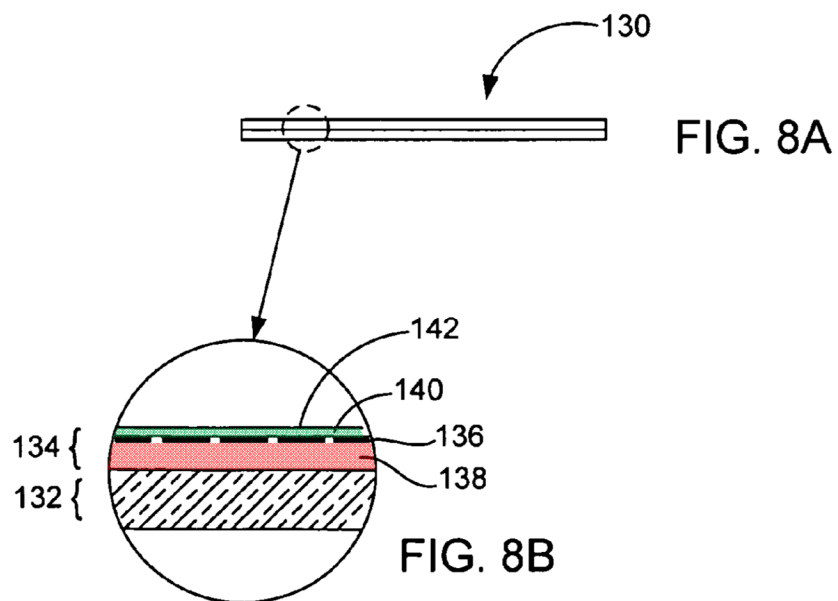


Figure 8 illustrates a cross-section of touchscreen 134 and LCD display 132.



Glass member 138 (shaded red) and protective cover sheet 140 (shaded green) are part of touchscreen 134 and protect display 132 from forces exerted on touchscreen 134. *Id.* ¶¶71-72. Both are made of glass. *Id.*

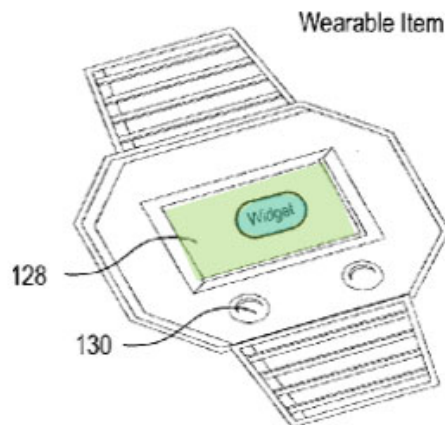
XII. DETAILED EXPLANATION OF THE UNPATENTABILITY GROUNDS

A. Ground 1: Claims 1-4, 6-19, and 21-24 are obvious in view of Louch.

1. Independent Claim 1

a. Element 1[pre]: A wristwatch having:

Louch teaches the preamble, to the extent it is limiting. Ex-1002 ¶¶83-85. As shown in Figure 1F, Louch discloses “a *digital watch*”³ with a touch sensitive display area 128 displaying a dashboard/widget. Ex-1005 ¶49.



³ Throughout, emphasis is added unless otherwise specified.

b. Element 1[a]: a digital matrix display;

Louch teaches Element 1[a]. Ex-1002 ¶¶86-91.

The '922 Patent defines a matrix display as “a display formed by a matrix of pixels” and contrasts segmented displays, which use segments to form a limited number of symbols. Ex-1001, 1:20-30. Louch’s LCD display can render web content in windows (Ex-1005 ¶¶114, 37) and enables widgets to be moved freely around the display. *Id.* ¶¶34, 51. Accordingly, a POSITA would have recognized Louch’s LCD display as a digital matrix display. Ex-1002 ¶¶51-55, 89.

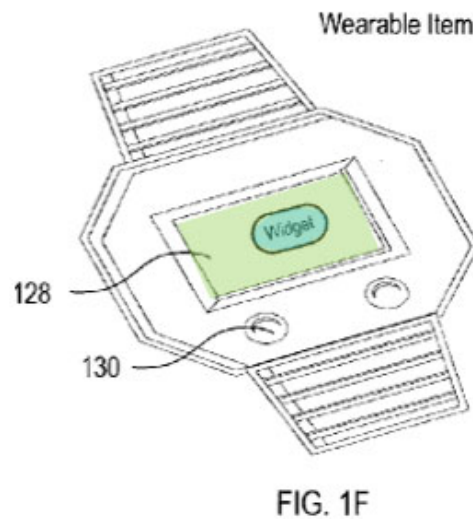
Furthermore, Louch discloses that the digital watch shown in Figure 1F (above) can “include *displays* having display areas that are entirely or partially *multi-touch sensitive*.” Ex-1005 ¶52. Louch incorporates by reference Hotelling (Ex-1006) as an example of a “multi-touch-sensitive display.” Ex-1005 ¶43. Hotelling discloses that its multi-touch-sensitive display may include a “liquid crystal display (e.g., active *matrix*, passive *matrix* and the like)” (Ex 1006 ¶51), and is a “pixilated array” (*id.* ¶68), both of which signify a “digital matrix display” as recited in the claim. Ex-1002 ¶89.

c. Element 1[b]: a sheet of touch-sensitive glass;

Louch teaches Element 1[b]. Ex-1002 ¶¶92-96.

Discussing Figure 1F, Louch discloses that “a typical input device for a digital watch would be ... *a touch sensitive display area 128*.” Ex-1005 ¶49.

Touch-sensitive display screens with glass overlays to protect electronics were well-known in the art (Ex-1001, 1:31-33), such that a POSITA would have considered it an obvious design choice. Ex-1002 ¶94.



Moreover, Hotelling discloses a glass touchscreen (glass member 138 and protective glass cover 140) to protect the display from forces exerted on the touchscreen. Ex-1006 ¶¶71-72 (“cover sheet 140 may be formed from ... glass”); *see also id.* ¶63 (“pixilated array” (¶68) includes “optically transmissive member 112 [] formed from a clear material such as glass or plastic.”) Thus, Louch-Hotelling teaches “a sheet of touch-sensitive glass.” Ex-1002 ¶95.

- d. **Element 1[c]: a processing circuit specifically laid out so as to interpret the signals from the touch-sensitive glass, for selecting a card from several available cards depending on these signals and for displaying said card on the entire digital matrix display;**

Louch discloses Element 1[c]. Ex-1002 ¶¶97-102.

Louch's "processor is operable for presenting widgets on the display *in response to touch input*, and to scroll the widgets on the display *in response to touch input*." Ex-1005 ¶12; *see also id.* ¶¶112-13. Louch's "widgets" are the claimed cards. Indeed, the '922 Patent uses a "widget" as an example of a card. Ex-1001, 4:17-19; Ex-1002 ¶99.

Louch further discloses "select[ing] a card from several available cards." Ex-1002 ¶100. "In some implementations, the user can scroll (horizontally or vertically) through dashboards or widgets across the display area 502 by touching the widgets and making the appropriate finger gestures in horizontal or vertical directions. When a desired dashboard/widget is found, the user can click or touch the dashboard/widget to invoke the widget." Ex-1005 ¶80; Fig. 5B.

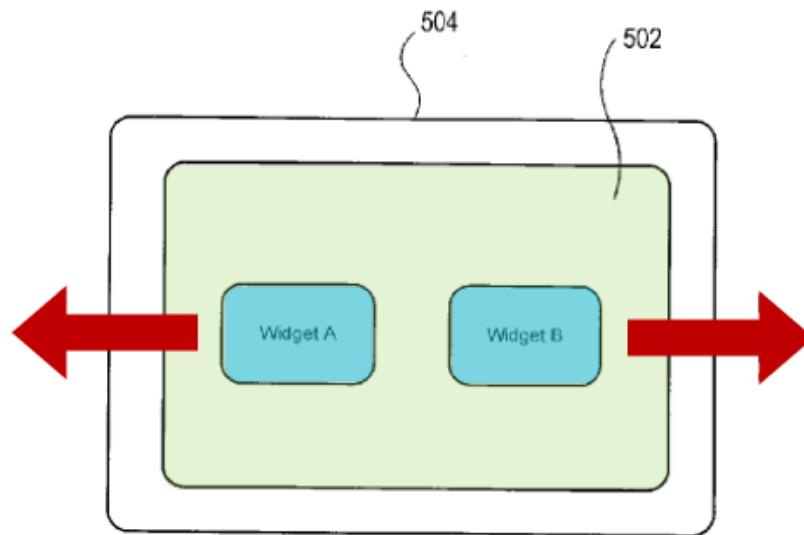


FIG. 5B

The selected card/widget can be displayed on the "entire digital matrix display." Ex-1002 ¶101; Ex-1005 ¶¶67 (a widget "can consume the entire display

area 40”), 80 (a widget “is displayed to cover the entire display area 502 (full screen)”), 81; Ex-1002 ¶101.

- e. **Element 1[d]: wherein said touch-sensitive glass is a two-dimensional glass for detecting a movement of at least one finger at any place on the touch-sensitive glass along at least two different directions;**

Louch teaches Element 1[d]. Ex-1002 ¶¶103-07.

“Two-dimensional glass” refers to the surface the user touches. Ex-1001, 2:7-23. Louch and Hotelling teach a two-dimensional touch surface as described with reference to Element 1[b] (Section XII.A.1.c). Ex-1002 ¶¶92-96. Hotelling discloses touch-sensitive electrodes “positioned almost anywhere” on the touchscreen, in rows and columns, or in “concentric and radial segments” to enable touch detection. Ex-1006 ¶64.

Louch detects movement along at least two different directions: “widgets [may] be scrolled *in multiple directions* in the display *by a user touching the display and gesturing with one or more fingers*.” Ex-1005 ¶¶18, 80 (“finger gestures in *horizontal or vertical directions*”); Fig. 5B.

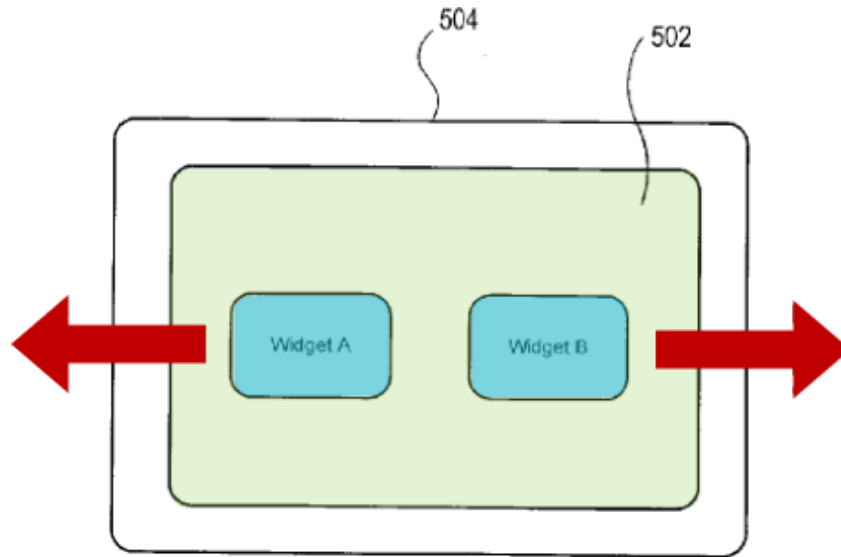


FIG. 5B

Moreover, a user can “*gesture in any direction* in the plane of the display 514 to scroll through open or closed widgets,” and “[s]crolling can be *horizontal, vertical and diagonal*.” *Id.* ¶¶87. Figures 5D-5E show finger movement is detected at any place on the touch-sensitive glass along at least two dimensions. *Id.* ¶¶85-87 (“For example, the user can touch the display 514 of a device (e.g., a mobile phone) with one or more fingers and make a gesture in any direction in the plane of the display 514 to scroll through open or closed widgets or dashboards, or to access features of same.”); Ex-1002 ¶96.

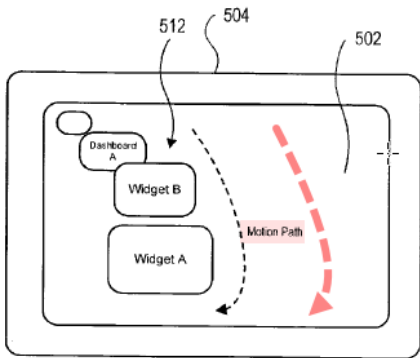


FIG. 5D

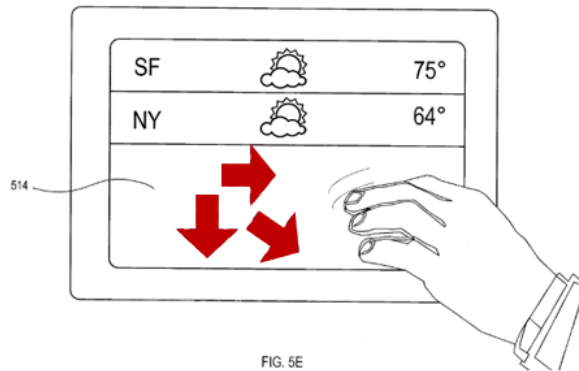


FIG. 5E

- f. **Element 1[e]:** wherein said processing circuit is specifically laid out so as to cause said several available cards to scroll past in order to lastingly replace the initially displayed card with a replacement card selected between said several available cards, wherein each card of said several available cards has a distinct fixed or periodically refreshed image,

Louch discloses Element 1[e]. Ex-1002 ¶¶108-11.

Louch discloses processing circuitry specifically laid out so enable scrolling through cards/widgets. See Element 1[c] (Section XII.A.1.d).

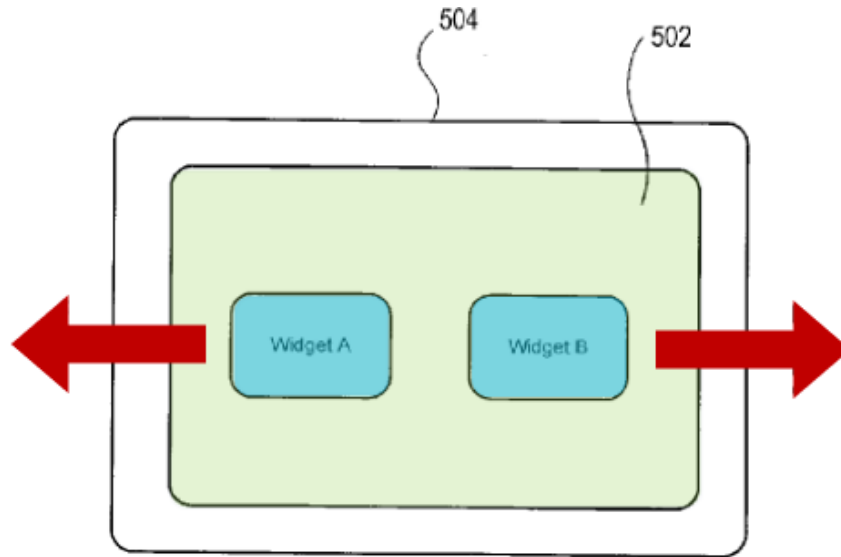


FIG. 5B

“In some implementations, the user can scroll (horizontally or vertically) through dashboards or widgets across the display area 502 by touching the widgets and making the appropriate finger gestures in horizontal or vertical directions.” Ex-1005 ¶80. This causes “widgets [to] be continuously scrolled by the display 514 in a Rolodex® manner and slowly de-accelerate to a stop.” *Id.* ¶87. When the scrolling stops, the replacement card/widget thus lastingly replaces the initially displayed card/widget. Ex-1002 ¶109.

Further, each of Louch’s widgets has “a distinct fixed or periodically refreshed image.” For example, a widget may be a “clock.” Ex-1005 ¶35. A clock is a “periodically refreshed image.” Ex-1001, 4:21-25 (card may be “periodically refreshed, for example for displaying the current time.”); Ex-1002

¶110. Louch also discloses that widgets may be “icons or thumbnail images,” which are fixed images Ex-1005 ¶35.

- g. Element 1[f]: wherein the size of the image corresponds to the size of said digital matrix display so that the displayed card occupies the whole of said digital matrix display;**

Louch teaches Element 1[f]. Ex-1002 ¶¶112-14.

Louch discloses a widget “can consume the entire display area 406.” Ex-1005 ¶67; *see also id.* ¶¶80 (describing a widget that “is displayed to cover the entire display area 502 (full screen)”), 81 (describing a widget that is “expanded to consume substantially all of the multi-touch-sensitive display area”), cls. 26-27.

- h. Element 1[g]: wherein one card of said several available cards and occupying the entire digital matrix display is immediately and without further user intervention replaced after the scrolling by a different card of said several available cards that occupies the entire digital matrix display;**

Louch teaches Element 1[g]. Ex-1002 ¶¶115-18

Louch’s widgets may “consume the entire display area” (Ex-1005 ¶67⁴), and may be “scrolled across the display area 502 of the device 504 using a finger or stylus” (*Id.* ¶¶79-80). Louch allows a user “to scroll through *open* or closed widgets” (*id.* ¶87) wherein a widget that is “opened” has been “expanded to

⁴ It would have been obvious to POSITA to apply the same teaching to Figure 5B and to a wearable device such as a watch. Ex-1002 ¶¶ 51-59, 116.

consume substantially all of the multi-touch-sensitive display area.” *Id.* ¶81. And “the user can make a single touch and gesture and widgets will be continuously scrolled by the display 514 in a Rolodex® manner and slowly de-accelerate to a stop.” *Id.* ¶87. Thus, Louch teaches scrolling through widgets that occupy the entire display and that the scrolling can slow to a stop without further user intervention. During such scrolling, one card/widget would “immediately and without further user intervention” replace another card/widget and “occupy[] the entire digital matrix display.” Ex-1002 ¶¶116-17.

Moreover, Louch’s dependent Claim 26 recites “the widgets are scrolled so that one widget is displayed at a time,” and dependent Claim 27 recites “wherein the one displayed widget consumes substantially the entire display.”

- i. Element 1[h]: wherein said processing circuit is further laid out so that the replacement card is dependent from the initially displayed card and from the direction of said movement and is independent from the starting point and end point of said movement on said digital matrix display.**

Louch teaches Element 1[h]. Ex-1002 ¶¶119-24.

Louch’s processing circuit is laid out such that “the replacement card is dependent from the initially displayed card and from the direction of said movement.” *Id.* ¶¶120-21. Louch’s “user can scroll (horizontally or vertically) through dashboards or widgets across the display area 502 by touching the widgets

and making the appropriate finger gestures in horizontal or vertical directions” (Ex-1005 ¶80), and can scroll “in a Rolodex® manner” (*Id.* ¶87). Like Rolodex cards, widgets are organized as a list that maintains its order while scrolling, as Figure 5B shows. Ex-1002 ¶¶120-21.

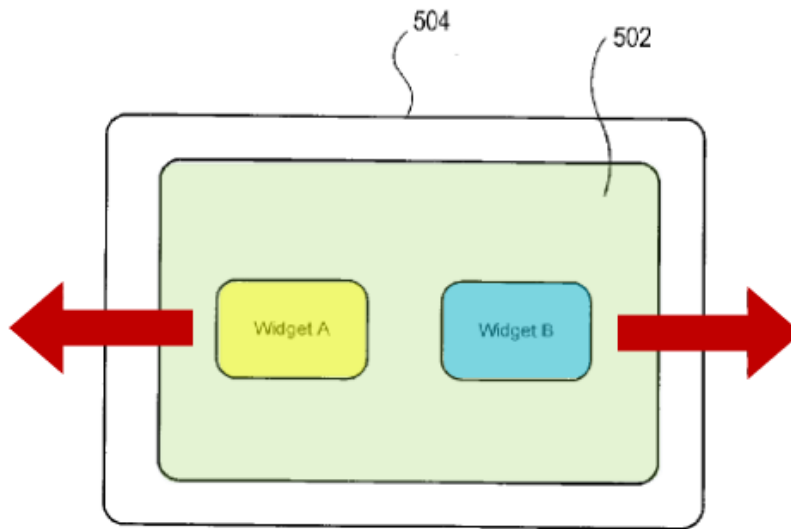


FIG. 5B

A POSITA would have recognized scrolling left from Widget A (yellow) would cause Widget B (blue) to replace it, and scrolling to the left again would bring up Widget C (not shown). Ex-1002 ¶¶120-122. Thus, “the replacement card is dependent from the initially displayed card and from the direction of said movement.” *Id.* ¶120.

Further, the replacement card/widget “is independent from the starting point and end point of said movement on said digital matrix display.” Louch describes scrolling solely in terms of the direction of the movement: “the user can touch the

display 514 of a device (e.g., a mobile phone) with one or more fingers and make a gesture in any direction in the plane of the display 514 to scroll through open or closed widgets or dashboards, or to access features of same.” Ex-1005 ¶87. Such movement is depicted in Figure 5D, where scrolling can be started by touching and motioning in an empty space near the widgets. *Id.* ¶86.

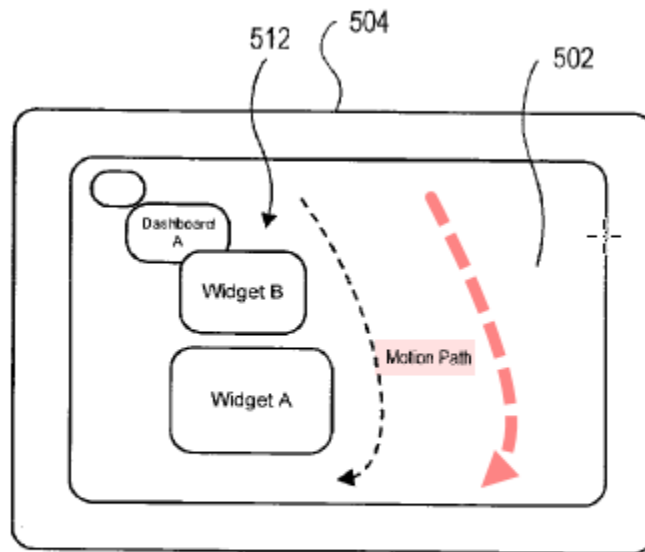


FIG. 5D

As shown, Louch does not require that the movement must begin or end at any particular location. Ex-1002 ¶122. In contrast, in embodiments where the user manually selects a widget, selecting that widget requires tapping at the “location of the item.” Ex-1005 ¶87. From these contrasting disclosures, a POSITA would have understood Louch’s scrolling process depends on direction of the movement—not on the particular location of the starting or ending points of the

movement. Ex-1002 ¶¶51-59, 122; *see also Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 807 (Fed. Cir. 2007) (holding that different terms in the written description is “strong evidence” that the patentee intended different meanings).

Moreover, in Louch, “[t]he speed of scrolling is controlled by the speed of the finger gestures made by the user,” and the scrolling can “slowly de-accelerate to a stop.” Ex-1005 ¶87. With this variable speed feature, the replacement card/widget depends on the direction and speed of the gesture and thus is “independent from the starting point and end point of said movement on said digital matrix display.” Ex-1002 ¶123.

2. Dependent Claim 2: The wristwatch of claim 1, wherein each card shows a particular function of the wristwatch.

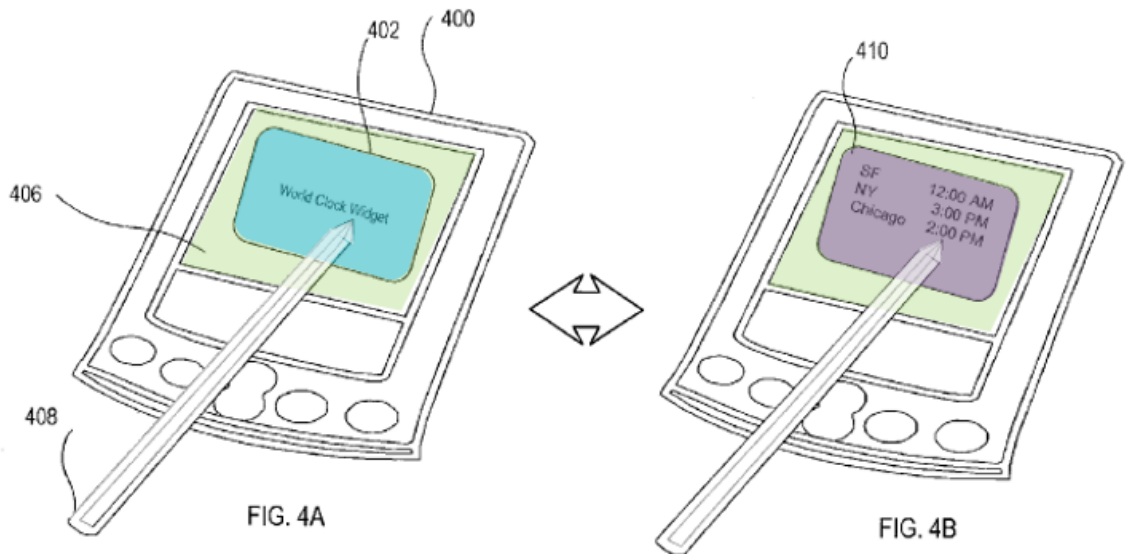
Louch discloses Claim 2. Ex-1002 ¶¶125-27. Louch’s wristwatch “can provide various functions through widgets.” Ex-1005 ¶50. For example, “[w]idgets can perform tasks for the user, such as providing a clock or a calculator.” *Id.* ¶35.

3. Dependent Claim 3: The wristwatch of claim 2, wherein each card defines the behavior of the touch-sensitive glass interface and the functions or modules that are to be launched depending on the movements of the finger on the card.

Louch discloses Claim 3. Ex-1002 ¶¶128-131.

Louch describes that “[u]sers can interact with ... widgets using ... input devices” (Ex-1005 ¶39) and “[a] typical input device for a digital watch [is] *a*

touch sensitive display area 128” (*id.* ¶49). For example, touching a world clock widget flips it over to display information, as shown in Figures 4A and 4B. *Id.* ¶67; *see also id.* ¶87 (describing using the touchscreen to “access features of” widgets). Louch teaches that this interaction applies to “other types of devices” besides PDAs. *Id.* ¶66.



A POSITA would have understood that each widget defines the behavior of the touchscreen by specifying the portions of the screen with which a user can interact with his finger to invoke that widget’s functionality. Ex-1002 ¶¶53-55, 130. Thus, Louch discloses Claim 3. *Id.* ¶131.

- 4. Dependent Claim 4: The wristwatch of claim 2, wherein said cards are arranged in a plurality of levels, wherein the choice of a card within each level is made either by scrolling vertically or by scrolling horizontally, wherein a particular command makes it possible to switch from one level to another.**

Louch teaches Claim 4. *Id.* ¶¶132-138.

Louch discloses widgets “arranged in a plurality of levels.” *Id.* ¶133. Louch “organiz[es] the widgets or dashboards into one or more groupings.” Ex-1005 ¶77. Each group of widgets is one of the claimed “plurality of levels.” Ex-1002 ¶133. “[W]idgets sharing one or more characteristics are placed in a stack 500 in a display area 502 of a device 504.” Ex-1005 ¶78. It would have been obvious to a POSITA that scrolling horizontally to access different stacks would be “a particular command [that] makes it possible to switch from one level [i.e., one group of widgets] to another,” as recited in Claim 4. Ex-1002 ¶134.

Moreover, it was well-known to organize related elements (such as television channels) in stacks so that scrolling in one direction (e.g., horizontal) can select between stacks while scrolling in another direction (e.g., vertical) can scroll within a stack. Ex-1002 ¶¶136-38 (discussing U.S. Patent Publication 2009/0199241 to Unger).

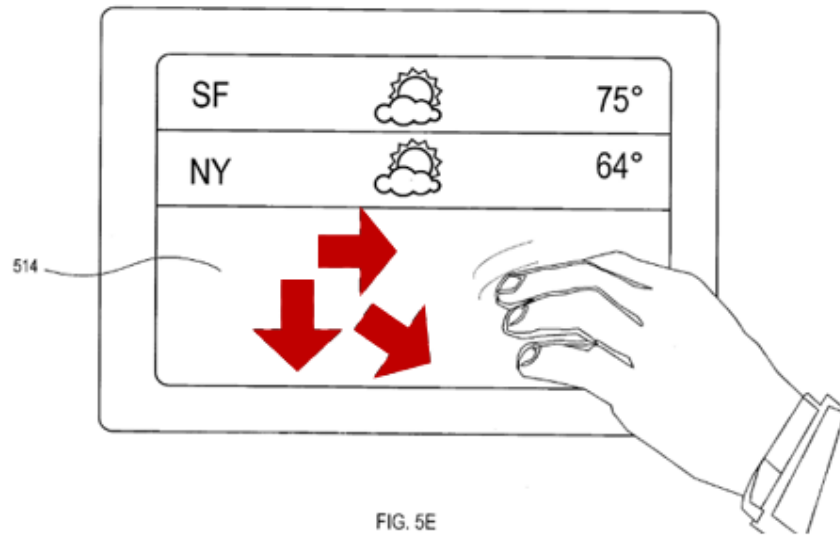
For the same reasons described above for Element 1[e] (Section XII.A.1.f), Louch teaches “the choice of a card within each level is made either by scrolling vertically or by scrolling horizontally.” *Id.* ¶135.

5. Dependent Claim 6: The wristwatch of claim 1, wherein the processing circuit being laid out for detecting simultaneous contacts on several points of the touch-sensitive glass so as to constitute a multi-touch haptic screen.

Louch discloses Claim 6. *Id.* ¶¶139-144.

Louch discloses “a user interface includ[ing] *a multi-touch-sensitive display area* for displaying representations of widgets, wherein at least one of the widget representations is *responsive to multi-touch input*.” Ex-1005 ¶20; *see also id.* ¶81 (same). In other words, it is a “multi-touch haptic⁵ screen.” Ex-1002 ¶¶141-42. This functionality is shown by Figure 5E, which “illustrates an exemplary *multi-touch-sensitive display* 514 for interacting with dashboards and/or widgets.” *Id.* ¶142.

⁵ The '922 Patent use the term “haptic” screen or surface to mean touchscreen: “A multi-touch surface is understood in the present application to refer to a *haptic surface or touch screen* capable of detecting several simultaneous contact points, for example simultaneous movements of several fingers on the haptic surface.” Ex-1001, 2:64-3:1; *see also id.*, 2:63-64 (“*multi-touch (or multi-haptic) surfaces*”).



Moreover, Louch incorporates by reference in its entirety Hotelling, for “Multipoint Touchscreen,” which describes multi-touch-sensitive display technology. Ex-1005 ¶43.

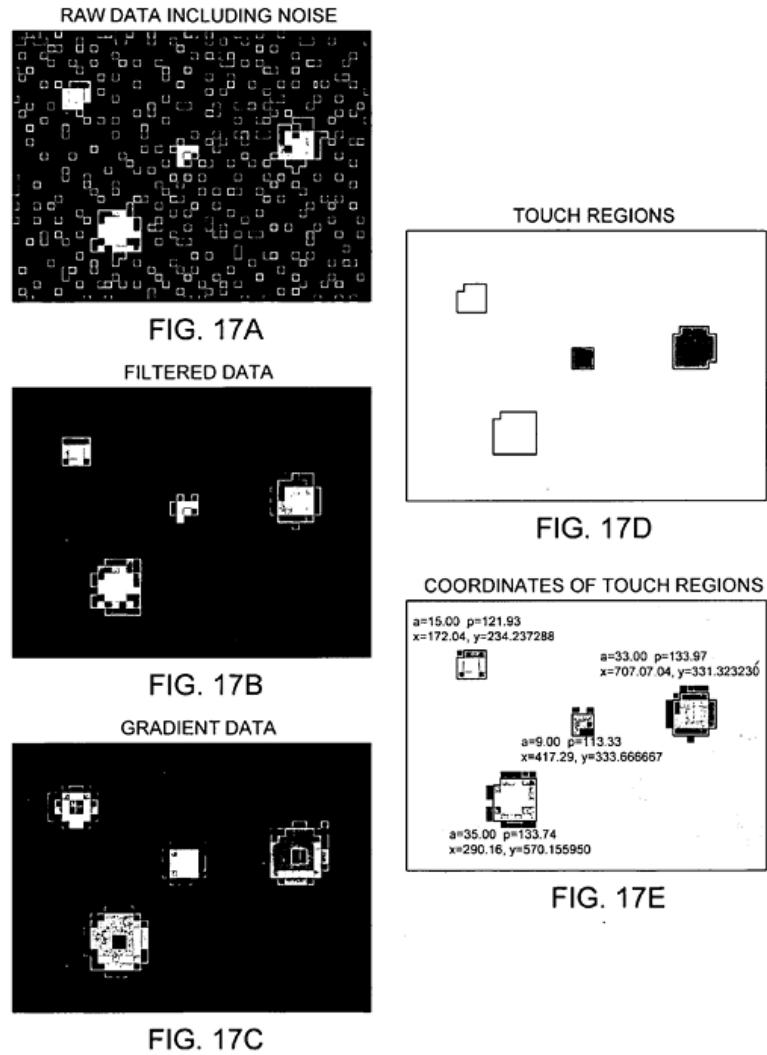
6. **Dependent Claim 7: The wristwatch of claim 1, wherein the processing circuit being laid out for determining the displacement of the center of gravity of the contact zone of the finger on the touch-sensitive glass.**

Louch teaches Claim 7. *Id.* ¶¶145-148.

Louch incorporates by reference in its entirety Hotelling for its description of “multi-touch-sensitive display technology.” Ex-1005 ¶43. Hotelling’s multi-touch display discloses a sensing circuit that performs a centroid calculation to determine the central point of a touch region on a touch screen. Ex-1006 ¶56 (“The conversions *may include determining the center point for each touch*

region (e.g., centroid).”), 56, 101-04 (explaining the calculation of a centroid).

This process is shown in Hotelling’s Figures 17A-E:



In the touchscreen context, a POSITA would have understood a centroid is the geometric center of an object or shape (such as the geometric center of the “raw” touch points depicted above), and, for a uniform density shape (e.g., a contacting finger), the centroid is the center of gravity. Ex-1002 ¶¶51-59, 147.

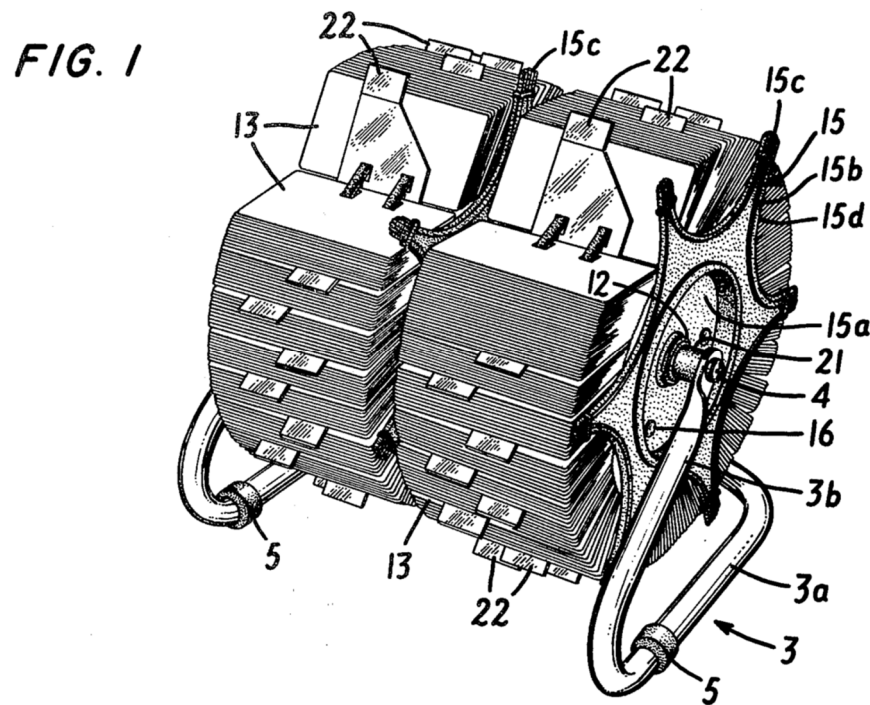
7. Dependent Claim 8: The wristwatch of claim 1, wherein said several available cards are organized in a virtual closed loop row or in a virtual closed loop column.

Louch teaches Claim 8. Ex-1002 ¶¶149-52.

The '922 Patent indicates that a closed loop requires that the last card lead back to the first card, and vice-versa. Ex-1001, 8:22-25.

Louch states that “widgets will be *continuously scrolled* by the display 514 *in a Rolodex® manner.*” Ex-1005 ¶87. A POSITA would have known a Rolodex scrolls cards in a continuous loop in which the last card is replaced by the first card, as shown below and in a 1979 Rolodex patent. Ex-1009, Fig. 1; Ex-1002 ¶¶56-57, 151.





Thus, Louch's widgets may be scrolled in a closed loop in which the last widget is replaced by the first widget, and vice-versa. Ex-1002 ¶151. Louch also discloses that scrolling can be horizontal or vertical (Ex-1005 ¶¶80, 87) and thus discloses that the closed loop can be in a virtual "row" or "column." Ex-1002 ¶152.

8. Independent Claim 9

- a. **Element 9[pre]: A method for replacing an initially displayed card displayed by a wristwatch by a replacement card, the method having the following steps:**

Louch teaches the preamble, to the extent it is limiting. *Id.* ¶¶153-55.

Louch discloses "a wristwatch" for the same reasons as Element 1[pre] (§XII.A.1.a), and Louch discloses "replacing an initially displayed card displayed

by a wristwatch by a replacement card” for the same reasons as Elements 1[c] (§XII.A.1.d) and 1[e] (§XII.A.1.f). Ex-1020, Element 9[pre].

- b. Element 9[a]: detecting a direction of a movement of at least one finger at any place and along at least two different directions on a two-dimensional touch-sensitive glass;**

Louch discloses Element 9[a] for the same reasons as Elements 1[b] (§XII.A.1.c) and 1[d] (§XII.A.1.e). Ex-1002 ¶¶156-58. Ex-1020, Element 9[a].

- c. Element 9[b]: [1] scrolling on a digital matrix display of several available cards so as for *said scrolling to stop of itself so as to align an edge of the replacement card with an edge of the matrix display*, [2] wherein one card of said several available cards and occupying the entire digital matrix display is replaced after the scrolling, immediately and without further user intervention, by a different card selected between said several available cards and occupying the entire digital matrix display; [3] and wherein the scrolling direction depends only on the direction of said movement so that said replacement card is dependent from the initially displayed card and from the direction of said movement and is independent from the starting point and end point of said movement on said digital matrix display;**

Louch teaches Element 9[b]. Ex-1002 ¶¶159-62.

Louch teaches Element 9[b][1], except for the *italicized* portion, for the same reasons as Element 1[e] (§XII.A.1.f); Element 9[b][2] for the same reasons as Elements 1[f] (§XII.A.1.g) and 1[g] (§XII.A.1.h); and Element 9[b][3] for the same reasons as Element 1[h] (§XII.A.1.i). Ex-1020, Element 9[b].

Louch further teaches the *italicized* portion of Element 9[b][1], “said scrolling to stop of itself so as to align an edge of the replacement card with an edge of the matrix display.” Louch states, “[T]he user can make a single touch and gesture and widgets will be continuously scrolled by the display 514 in a Rolodex® manner and slowly de-accelerate to a stop.” Ex-1005 ¶¶87. Because each widget can be made to fill the screen entirely (Ex-1005 ¶¶67, 80-81), when the scrolling stops, a POSITA would have been motivated to have the widget be aligned with the edges of the display, so that the replacement widget is fully visible and not sharing the display with part of another widget. Ex-1002 ¶161.

- d. Element 9[c]: [1] lastingly displaying the replacement card on the whole of said digital matrix display, wherein each card of said several available cards has a distinct fixed or periodically refreshed image, [2] the size of the images corresponding to the size of said digital matrix display.**

Louch teaches Element 9[c][1] for the reasons as Element 1[e] (§XII.A.1.f) and teaches Element 9[c][2] for the same reasons as Element 1[f] (§XII.A.1.g). Ex-1020, Element 9[c]; Ex-1002 ¶¶163-65.

- 9. Dependent Claim 10: The method of claim 9, further including the entering of a touch command for confirming or stopping the scrolling.**

Louch discloses Claim 10. *Id.* ¶¶166-69.

Louch discloses that a user can scroll through widgets/cards “by touching the widgets and making the appropriate finger gestures in horizontal or vertical

directions.” Ex-1005 ¶80; *see also* (§XII.A.1.f). Louch discloses that “[w]hen a desired dashboard/widget is found, the *user can click or touch the dashboard/widget to invoke the widget.*” Ex-1005 ¶80. “Such a touch to invoke the widget is a ‘touch command’ to stop the scrolling.” Ex-1002 ¶167. Moreover, a POSITA would have understood finger gestures for scrolling include moving a finger on the touchscreen to start scrolling and holding a finger in place on the touchscreen to stop the scrolling, similar to how a finger can also be used to stop an actual Rolodex. Ex-1002 ¶¶51-59, 168. “Moving a finger is a ‘touch command’ for confirming the scrolling, and holding a finger in place is a ‘touch command’ for stopping the scrolling.” *Id.* ¶167.

10. Dependent Claim 11: The method of claim 9, further comprising the detecting of simultaneous contacts on several points of the two-dimensional touch-sensitive glass.

Louch discloses Claim 11 for the same reasons as Claim 6 (§XII.A.5).

Ex-1020, Cl. 11; Ex-1002 ¶170.

11. Dependent Claim 12: The method of claim 9, further comprising the determining of the displacement of the center of gravity of the contact zone of the finger on the two-dimensional touch-sensitive glass.

Louch discloses Claim 12 for the same reasons as Claim 7 (§XII.A.6).

Ex-1020, Cl. 12; Ex-1002 ¶171.

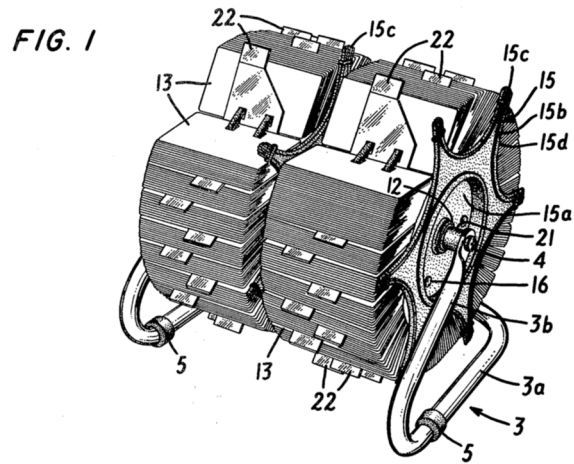
- 12. Dependent Claim 13: The method of claim 9, wherein the different cards scroll in continuous fashion on the digital matrix display, the scrolling being interrupted so as to align the edge of a card with the edge of the digital matrix display.**

Louch discloses or teaches Claim 13. Ex-1002 ¶¶172-77.

As discussed above in Element 1[e](§XII.A.1.f) and 1[f](§XII.A.1.g), Louch discloses scrolling widgets (cards) that fill the entire display. *See also* Ex-1005 ¶¶79-80 (“widgets are scrolled across the display area 502 of the device 504 using a finger or stylus”) 67 (widget “can consume the entire display area 406”).

The widgets scroll “in continuous fashion.” Namely, “widgets will be *continuously* scrolled by the display 514 in a Rolodex® manner and slowly de-accelerate to a stop.” Ex-1005 ¶87.

A POSITA would have understood that “in a Rolodex® manner” means the scrolling is “interrupted so as to align the edge of a card with the edge of the digital matrix display.” Ex-1002 ¶175. In a Rolodex, when the scrolling of cards is stopped, an individual card is shown. *Id.*



Ex-1009, Fig. 1. Because the widget fills the entire display, the edge of a widget “align[s] with the edge of the digital matrix display” as recited in Claim 13. *Id.* ¶176.

Furthermore, “[w]hen a desired dashboard/widget is found, the user can click or touch the dashboard/widget to invoke the widget. In some implementations, when the dashboard/widget is invoked the dashboard/widget is displayed to cover the entire display area 502 (full screen).” Ex-1005 ¶80. Because the widget covers the entire display, the edge of a widget “align[s] with the edge of the digital matrix display” as recited in Claim 13. Ex-1002 ¶176.

- 13. Dependent Claim 14: The method of claim 13, wherein the card scrolling speed or amplitude depend on the speed or amplitude of movement of the finger on the two-dimensional touch-sensitive glass.**

Louch discloses or teaches Claim 14. *Id.* ¶¶178-80. Louch states: “The speed of the scrolling is controlled by the speed of the finger gestures made by the user.” Ex-1005 ¶87.

- 14. Dependent Claim 15: The method of claim 14, wherein the card scrolling speed is variable, the scrolling being slowed down before stopping completely.**

Louch discloses or teaches Claim 15. Ex-1002 ¶¶181-83.

In addition to the speed of the scrolling being variable and “controlled by the speed of the finger,” Louch discloses scrolling animations that “give the impression of *friction* or other properties.” Ex-1005 ¶87. For example, “the user can make a single touch and gesture and widgets will be continuously scrolled by the display 514 in a Rolodex® manner and *slowly de-accelerate to a stop.*” *Id.*

- 15. Dependent Claim 16: The method of claim 15, wherein the card scrolling speed is variable, the scrolling being slowed down each time a card is switched to another one.**

Louch discloses or teaches Claim 16. Ex-1002 ¶¶184-87.

Louch discloses “the card scrolling speed is variable” for the same reasons as Claim 15 (§XII.A.14). *Id.* ¶185.

Louch also discloses “the scrolling being slowed down each time a card is switched to another one” as recited in Claim 16. Widgets scroll “in a Rolodex®

manner and slowly de-accelerate to a stop.” Ex-1005 ¶87. In a Rolodex, the cards flip one after the other. Ex-1002 ¶¶56-57, 186. The movement is faster before each card is flipped than after each card is flipped. *Id.* In other words, the scrolling is “slowed down each time a card is switched to another one,” as recited in Claim 16, which provides the “impression of friction.” Ex-1005 ¶87. *Id.* A POSITA would have been motivated to scroll in a Rolodex manner to give the user a similar experience and/or to allow the user to recognize each widget as it scrolls by. Ex-1002 ¶186.

16. Dependent Claim 17: The method of claim 13, wherein the card scrolling is interrupted by a brief pressure on the two-dimensional touch-sensitive, so as to cause the card best centered on the display at the time of the interruption to be selected and displayed.

Louch discloses or teaches Claim 17. Ex-1002 ¶¶188-91.

Louch discloses “the card scrolling is interrupted by a brief pressure on the two-dimensional touch-sensitive” for the same reasons as Claim 10 (§XII.A.9). Ex-1002 ¶189. Louch further states that, when scrolling, “the user can click or touch the dashboard/widget to invoke the widget” and invoking the widget can cause it to “to cover the entire display area 502 (full screen).” Ex-1005 ¶80. A POSITA would have understood that when scrolling full-screen widgets, the “best centered” widget would be selected and displayed. Ex-1002 ¶¶51-59, 190-91.

17. **Dependent Claim 18: The method of claim 9, wherein the size of the displayed cards is reduced during scrolling, so as to display several cards simultaneously.**

Louch discloses Claim 18 in Figures 5B and 5D. Ex-1005 ¶¶79, 86;

Ex-1002 ¶¶192-94.

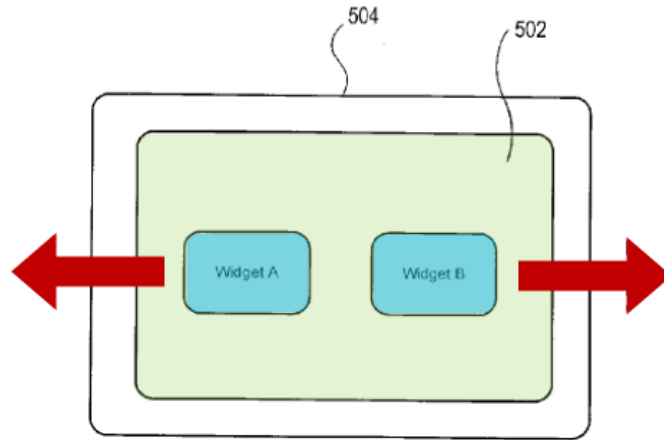


FIG. 5B

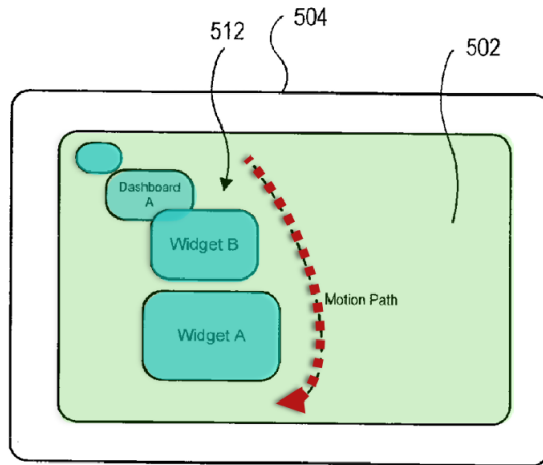


FIG. 5D

The size of the widgets/cards can be “reduced during scrolling” so the display can show several cards simultaneously. Ex-1002 ¶193.

- 18. Dependent Claim 19: The method of claim 9, wherein said cards are arranged in a plurality of levels, wherein the method comprises a step of vertical or horizontal scrolling and a step of entering a particular command for switching from one level to another.**

Louch discloses Claim 19 for the same reasons as Claim 4 (§XII.A.4).

Ex-1020, Cl. 19; Ex-1002 ¶195.

- 19. Dependent Claim 21: The method of claim 9, wherein said several available cards are organized in a virtual closed loop row or in a virtual closed loop column.**

Louch discloses Claim 21 for the same reasons as Claim 8 (§XII.A.7).

Ex-1020, Cl. 21; Ex-1002 ¶196.

- 20. Dependent Claim 22: The method of claim 9, wherein said several available cards are organized in a virtual closed loop row and in a virtual closed loop column.**

Louch discloses Claim 22 for the same reasons as Claim 8 (§XII.A.7).

Ex-1020, Cl. 22. Because Louch discloses that “scrolling can be horizontal, vertical, *and* diagonal” (Ex-1005 ¶87), Louch discloses or teaches widgets (cards) organized in both virtual closed loop row and a virtual closed loop column.

Ex-1002 ¶197-98.

21. Independent Claims 23 and 24

a. Elements 23[pre] and 24[pre]: A wristwatch having:

To the extent the preamble is limiting, Louch teaches the preamble for the same reasons as Element 1[pre] (§XII.A.1.a). Ex-1020, Elements 23[pre], 24[pre];

Ex-1002 ¶199.

b. Elements 23[a] and 24[a]: a digital matrix display;

Louch discloses Elements 23[a] and 24[a] for the same reasons as Element 1[a] (§XII.A.1.b). Ex-1020, Elements 23[a], 24[a]; Ex-1002 ¶200.

c. Elements 23[b] and 24[b]: a sheet of touch-sensitive glass;

Louch discloses Elements 23[b] and 24[b] for the same reasons as Element 1[b] (§XII.A.1.c). Ex-1020, Elements 23[b], 24[b]; Ex-1002 ¶201.

d. Elements 23[c]: [1] a processing circuit specifically laid out so as to interpret the signals from the touch-sensitive glass, for selecting a card from several available cards depending on these signals and for displaying said card on the entire digital matrix display, [2] wherein each card has a distinct fixed or periodically refreshed image;

Element 24[c]: a processing circuit specifically laid out so as to interpret the signals from the touch-sensitive glass, for selecting a card from several available cards depending on these signals and for displaying said card on the entire digital matrix display;

Louch discloses Elements 23[c][1] and 24[c] for the same reasons as Elements 1[c] (§XII.A.1.d) and teaches Element 23[c][2] for the same reasons as Element 1[e] (§XII.A.1.f). Ex-1020, Elements 23[c], 24[c]; Ex-1002 ¶202.

- e. **Elements 23[d] and 24[d]: wherein said touch-sensitive glass is a two-dimensional glass for detecting a movement of at least one finger at any place on the touch-sensitive glass along at least two different directions;**

Louch discloses Elements 23[d] and 24[d] for the same reasons as Element 1[d] (§XII.A.1.e). Ex-1020, Elements 23[d], 24[d]; Ex-1002 ¶203.

- f. **Element 23[e]: [1] wherein said processing circuit is specifically laid out so as to cause said several available cards to scroll past by *displaying the image of said cards one at a [time] on the digital matrix display* in order to lastingly replace the initially displayed card with a replacement card selected within said several available cards, [2] immediately after the scrolling and without further user intervention;**

Element 24[e]: wherein said processing circuit is specifically laid out so as to cause cards to scroll past in order to lastingly replace the initially displayed card with a replacement card, wherein each card has a fixed or periodically refreshed image;

Louch teaches Element 24[e] and all but the *italicized* portion of Element 23[e][1] for the same reasons as Elements 1[e] (§XII.A.1.f) and Element 23[e][2] for the same reasons as Element 1[g] (§XII.A.1.h). Ex-1020, Elements 23[e], 24[e]; Ex-1002 ¶¶204-06.

The *italicized* portion of Element 23[e][1], “displaying the image of said cards one at a [time] on the digital matrix display,” is disclosed by Louch. Louch’s dependent Claim 26 teaches “the widgets are scrolled so that one widget is displayed at a time,” and dependent Claim 27 teaches “the one displayed widget

consumes substantially the entire display.” Louch also discloses that “the user can make a single touch and gesture and widgets will be continuously scrolled by the display 514 in a Rolodex® manner and slowly de-accelerate to a stop.” Ex-1005 ¶87. Thus, Louch’s full-screen widgets scroll and slow to a stop without further user intervention. Ex-1002 ¶205.

- g. Elements 23[f] and 24[f]: wherein the size of the image corresponds to the size of said digital matrix display so that the displayed card occupies the whole of said digital matrix display;**

Louch discloses Elements 23[f] and 24[f] for the same reasons as Element 1[f] (§XII.A.1.g). Ex-1020, Elements 23[f], 24[f]; Ex-1002 ¶207.

- h. Elements 23[g] and 24[g]: wherein said processing circuit is further laid out so that the replacement card is dependent from the initially displayed card and from the direction of said movement and is independent from the starting point and end point of said movement on said digital matrix display.**

Louch discloses Elements 23[g] and 24[g] for the same reasons as Element 1[h] (§XII.A.1.i). Ex-1020, Elements 23[g], 24[g]; Ex-1002 ¶208.

- i. Element 24[h]: wherein said several available cards are organized in a virtual closed loop row and in a virtual closed loop column.**

Louch discloses Element 24[h] for the same reasons as Claim 22 (§XII.A.20). Ex-1020, Elements 24[h]; Ex-1002 ¶209.

B. Ground 2: Claims 5 and 20 are obvious over Louch in view of Hepp

1. A POSITA would have been motivated to combine Louch and Hepp's teachings and would have had a reasonable expectation of success.

A POSITA would have been motivated to combine Louch and Hepp with a reasonable expectation of success. Ex-1002 ¶¶51-58, 210. Like Louch, Hepp describes touchscreens. Ex-1007, 5:60-63; 7:32-36. Both describe displaying representations of time. Ex-1005 ¶¶35, 58, 67, 68, 70, Figs. 4A and 4B; Ex-1007, 4:46-50, 6:63-7:5. Hepp simulates a mechanical watch with clock hands on a touchscreen. Ex-1007, 4:55-58, 6:27-31, 6:66-7:5.

It would have been obvious to apply Hepp's simulated mechanical watch to Louch's world clock widget. Ex-1002 ¶212. In addition to being an obvious design choice (*id.*), Hepp notes this representation of time is "adapted to the acquired human sense of orientation in time in an optimum way." Ex-1007, 6:27-31. Thus, design incentives and market forces would have motivated a POSITA to apply Hepp's teachings to Louch's world clock widget with predictable results and expectation of success because matrix displays can be programmed to display clock hands as taught by Hepp. Ex-1002 ¶¶51-59, 213.

2. **Dependent Claim 5: The wristwatch of claim 4, wherein at least one of said cards makes it possible to calculate and display a simulation of a mechanical watch displaying the time, so as to enable the user to change the mechanical watch displayed by scrolling cards.**

Louch-Hepp teaches Claim 5. *Id.* ¶¶214-18.

Hepp discloses displaying an analog clock-face with hands on a LCD touchscreen in its Figure 1. Ex-1007, 4:55-58.

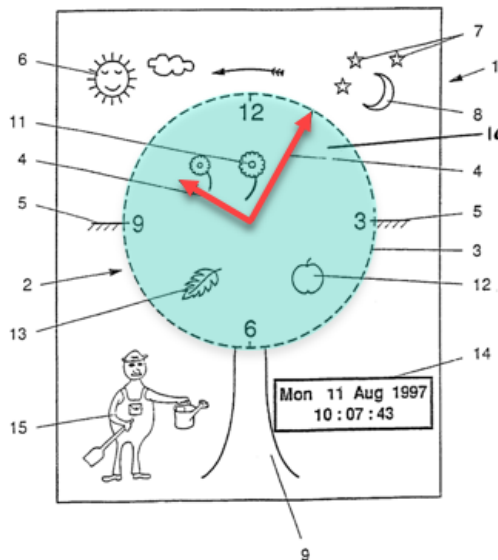


Fig. 1

This “use of two hands in an analog manner” simulates a mechanical clock. *Id.*, 1:9-12. A POSITA would have applied this teaching to the world clock widget of Louch. *See supra* §XII.B.1. Thus, Louch-Hepp teaches “at least one of said cards makes it possible to calculate and display a simulation of a mechanical watch displaying the time,” as recited in Claim 5.

Moreover, because Louch teaches scrolling to switch cards (Elements 1[c]-[d] (§XII.A.1.d-e)), Louch-Hepp also enables “the user to change the mechanical watch displayed by scrolling cards,” as recited in Claim 5. Moreover, Hepp discloses multiple pages may include different representation of time. Ex-1007, 8:51-52 (first page with “clock”), 8:60-61 (seventh page with “personalized time representations”). Hepp also describes touching the display to changes pages. *Id.*, 8:35-36.

3. Dependent Claim 20: The method of claim 9, wherein a plurality of said cards displays a simulation of a virtual mechanical movement.

Louch-Hepp teaches Claim 20 for the same reasons as Claim 5 (§XII.B.2). Ex-1020, Cl. 20; Ex-1002 ¶219.

C. Ground 3: Claims 8, 13-17, 21, 22, and 24 are obvious over Louch in view of Duarte.

1. A POSITA would have been motivated to combine Louch and Duarte’s teachings and would have had a reasonable expectation of success.

A POSITA would have been motivated to combine Louch and Duarte with a reasonable expectation of success. Ex-1002 ¶¶51-59, 220. Like Louch, Duarte describes touchscreens on small devices (such as Louch’s wristwatch) that users can swipe horizontally or vertically to move cards (called windows 301) organized in rows and/or columns. Ex-1010, 5:16-18, 5:38-41, 6:59-7:17, 7:44-8:4. Duarte describes transition effects, such as closed-loop scrolling and snap-into-place.

Ex-1010, 7:6-17, 8:17-22. It would have been obvious that these transition effects would improve Louch's widget scrolling. Ex-1002 ¶220. A POSITA would have been motivated to add these transition effects to make it easier for a user to find and display a desired widget. *Id.* Closed-loop scrolling would have provided a quicker mechanism to navigate from the last widget to the first widget and vice-versa. *Id.* A POSITA would also have realized that the snap-into-place feature would more quickly allow a user to automatically center a widget as opposed to manual positioning. *Id.*

- 2. Dependent Claim 8: The wristwatch of claim 1, wherein said several available cards are organized in a virtual closed loop row or in a virtual closed loop column.**

Dependent Claim 21: The method of claim 9, wherein said several available cards are organized in a virtual closed loop row or in a virtual closed loop column.

Dependent Claim 22: The method of claim 9, wherein said several available cards are organized in a virtual closed loop row and in a virtual closed loop column.

Independent Claim 24, Element 24[h]: said several available cards are organized in a virtual closed loop row and in a virtual closed loop column.

As described above, Louch discloses or teaches Claims 8 (§XII.A.7), 21 (§XII.A.19); 22 (§XII.A.20) and 24 (§XII.A.22).

Alternatively, Louch-Duarte also teach Claims 8, 21, 22, and 24. Ex-1002 ¶¶222-24, 234-35, 236-38. Duarte also discloses Claims 8, 21, and 22 and Element

24[h]. Duarte discloses that cards, “windows 301,” may be scrolled in closed loop. Ex-1010, 8:17-22. Because both Louch and Duarte describe scrolling in both horizontal and vertical directions (Ex-1005 ¶87, Ex-1010, 3:44-48, 3:62-65), Louch-Duarte discloses or teaches a virtual closed loop row and column. Ex-1002 ¶223. It would have been obvious to apply Duarte’s teaching of closed loop rows and columns to the horizontal and vertical scrolling of widgets in Louch. *Id.*

3. Dependent Claim 13: The method of claim 9, wherein the different cards scroll in continuous fashion on the digital matrix display, the scrolling being interrupted so as to align the edge of a card with the edge of the digital matrix display.

Louch discloses or teaches Claim 13. *See supra* §XII.A.12. Alternatively, Louch-Duarte teaches Claim 13. Ex-1002 ¶¶225-27.

Like Louch, Duarte describes scrolling cards (windows 301) that fill the entire display of touchscreens. Ex-1010, 6:59-63. And after scrolling, the cards automatically snap into position. *Id.*, 7:6-10. Because the scrolling cards fill the entire display, this snap-into-position feature results in “the scrolling being interrupted so as to align the edge of a card with the edge of the digital matrix display” as recited in Claim 13. Ex-1002 ¶226.

4. Dependent Claims 14, 15, and 16

Dependent Claims 14, 15, and 16 depend (directly or indirectly) from Claim 13. Louch-Duarte teaches Claim 13. *See supra* §XII.C.3. And Louch teaches the

additional limitations of Claim 14 (§XII.A.13), Claim 15 (§XII.A.14), and Claim 16 (§XII.A.15). Thus, Louch-Duarte also teaches Claims 14, 15, and 16. Ex-1002 ¶¶228-29.

5. **Dependent Claim 17: The method of claim 13, wherein the card scrolling is interrupted by a brief pressure on the two-dimensional touch-sensitive, so as to cause the card best centered on the display at the time of the interruption to be selected and displayed.**

Louch-Duarte teaches Claim 13 (§XII.C.3), and Louch teaches the additional limitation of Claim 17 (§XII.A.16).

Duarte also teaches Claim 17. Ex-1002 ¶¶230-33. Duarte states, “In one embodiment, if the user drags windows 301 so as to place a window 301 *sufficiently close to the central position* to make it clear that the intention is to give the window 301 focus, the window 301 snaps *into the central position* upon completion of the drag operation.” Ex-1010, 7:6-10. Duarte teaches that windows 301 can be scrolled in full-screen mode (*id.*, 6:59-63), so the window that snaps into the central position is the window that is selected and displayed. Ex-1002 ¶232. Duarte also teaches that the window can automatically switch to full-screen mode (Ex-1010, 6:26-28), which means that the window that snaps into the central position is the window that is selected and displayed. *Id.* Thus, Louch-Duarte teaches Claim 17. Ex-1002 ¶233.

D. Ground 4: Claim 23 is obvious over Louch in view of Park.

- 1. A POSITA would have been motivated to combine Louch and Park's teachings and would have had a reasonable expectation of success.**

A POSITA would have been motivated to combine the teachings of Louch and Park and would have had a reasonable expectation of success. Ex-1002 ¶¶51-59, 239. Like Louch, Park discloses a portable device with a touchscreen that a user can swipe to scroll through cards (called pages in Park). Ex-1011 ¶34. Park further describes that the cards can be scrolled one page at a time. Ex-1011 ¶¶44, 55. It would have been obvious to a POSITA to apply this one-page-at-a-time teaching to the scrolling of widgets in Louch so users can evaluate each widget before moving to the next. Ex-1002 ¶¶56-58, 239.

2. Independent Claim 23

As discussed above, Louch discloses or teaches Claim 23. *See supra* §XII.A.21.

Alternatively, Louch-Park also teaches Claim 23. Ex-1002 ¶241-42. Park discloses a mobile device with a touchscreen in which pages may be scrolled one page at a time. Ex-1011 ¶¶44, 55. It would have been obvious to apply scrolling one page at a time (as taught in Park) to the touchscreen of Louch to allow a user to recognize a card while it is scrolling past. Ex-1002 ¶242.

E. Ground 5: Claims 1-13 and 17-24 are obvious over the combination of Duarte, Biggs, and Hotelling.

1. A POSITA would have been motivated to combine the teachings of Duarte, Biggs, and Hotelling and would have had a reasonable expectation of success.

A POSITA would have been motivated to combine the teachings of Duarte, Biggs, and Hotelling and reasonably expected success in doing so. Ex-1002 ¶243. Duarte describes touchscreens on small devices that users can swipe horizontally or vertically to move cards (windows) organized in rows and/or columns. Ex-1010, 5:38-41, 6:59-7:17. Biggs discloses a wristwatch with a touch-sensitive LCD display. Ex-1012, 3:56-65, 9:7-16. Biggs further discloses that users can customize various time displays and choose which display appears on the LCD screen. Ex-1012, 3:43-48, 7:6-12, 8:60-65. Hotelling describes a multipoint touchscreen allowing a user to interact with a graphical user interface on a LCD display. Ex-1006 ¶37.

It would have been obvious to a POSITA to improve Duarte, with the wristwatch of Biggs, having selectable customized time displays. Ex-1002 ¶¶51-59, 244. Duarte's invention is intended for devices with small screens like the watch in Biggs. Ex-1010, 2:26-52. Using a touchscreen would avoid additional input devices separate from the display. Ex-1002 ¶¶51-58, 244. And using a touchscreen to scroll through several saved customized time displays is a more natural and desirable interface than downloading a new display each time the user

wishes for a change. *Id.* Thus, design incentives and market forces would have motivated a POSITA to combine Duarte and Biggs. *Id.*

It would have been obvious to further apply Hotelling to implement the touchscreen in Duarte and Biggs. Ex-1002 ¶245. Like Duarte and Biggs, Hotelling discloses a LCD display with a touchscreen. Ex-1006 ¶37. Hotelling's touchscreen includes a glass member or protective glass coversheet to protect the LCD from forces exerted on the touchscreen. *Id.* ¶¶71-72. In implementing a wristwatch with a touchscreen as taught by Biggs, a POSITA would have been motivated to use a touchscreen with glass to protect the LCD display as taught in Hotelling. *Id.*; Ex-1002 ¶245. A POSITA would have understood the face of a wristwatch is susceptible to bumps and scratches and thus needs protection. Ex-1002 ¶246. Moreover, Duarte's touch-sensitive screen 101 "can be implemented using any technology that is capable of detecting a location of contact and/or user motion proximate to the surface." Ex-1010, 5:38-41; Ex-1002 ¶246.

2. Independent Claim 1

a. Element 1[pre]: A wristwatch having:

Duarte-Biggs-Hotelling teaches the preamble, to the extent it is limiting. Ex-1002 ¶¶247-48. In Figure 2b, Biggs discloses a "device 101, *for example a watch*, [that] contains an operating system for monitoring all I/O functions as well

as a display driver and device interfaces controlled by a processor 123.” Ex-1012, 9:11-14.

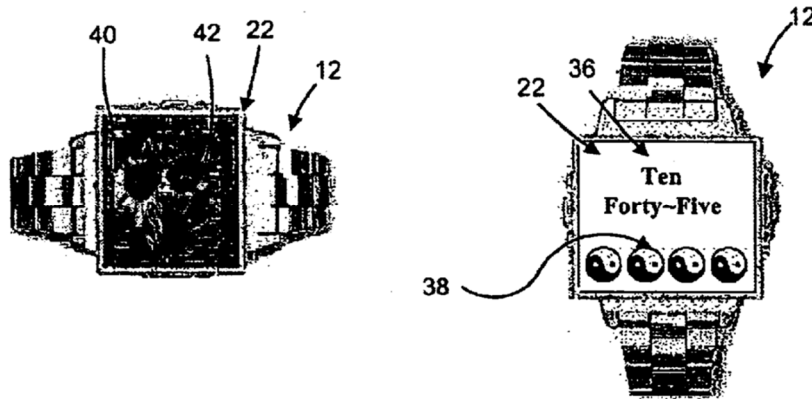
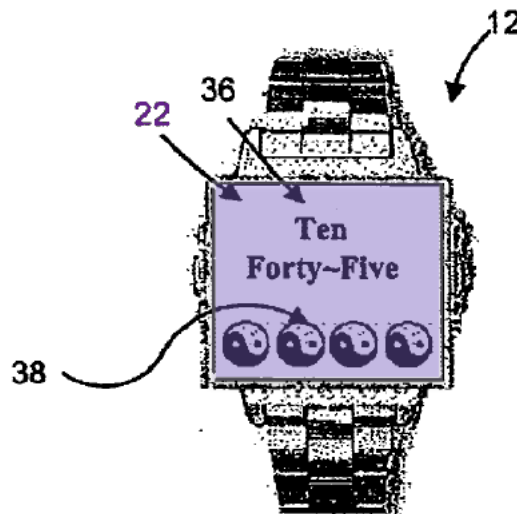


Figure 2b

b. Element 1[a]: a digital matrix display;

Duarte-Biggs-Hotelling teaches Element 1[a]. Ex-1002 ¶¶249-52.

Bigg’s display 22 is “preferably a high resolution LCD display” capable of showing customized display (including animation) indicating the time. Ex-1012, 3:52-56.



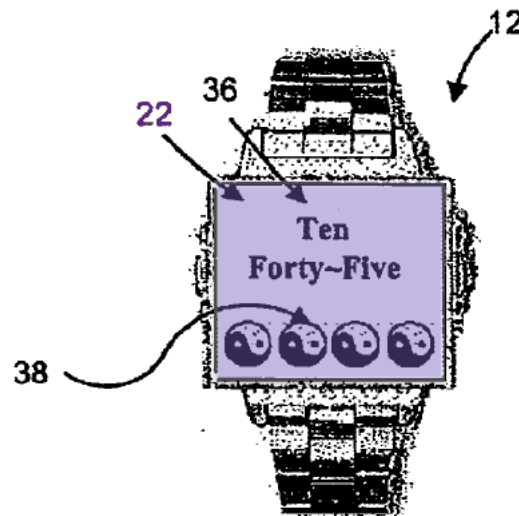
A high resolution LCD with animation is a digital matrix display. Ex-1002 ¶251; *see also id.* ¶88. Furthermore, Hotelling describes its LCD as a “matrix” display. Ex-1006 ¶51.

Accordingly, Duarte-Biggs-Hotelling teaches the digital matrix display of Element 1[a].

c. Element 1[b]: a sheet of touch-sensitive glass;

Duarte-Biggs-Hotelling teaches Element 1[b]. Ex-1002 ¶¶253-56.

Display 22 in Figure 2b of Biggs is also touch-sensitive. Ex-1012, 3:64-65.



As explained above (§XII.E.1), it would have been obvious to use a touchscreen made of glass as taught in Hotelling. Ex-1002 ¶254.

Accordingly, Duarte-Biggs-Hotelling teaches the sheet of touch-sensitive glass of Element 1[b].

- d. Element 1[c]: a processing circuit specifically laid out so as to interpret the signals from the touch-sensitive glass, for selecting a card from several available cards depending on these signals and for displaying said card on the entire digital matrix display;**

Duarte-Biggs-Hotelling teaches Element 1[c]. Ex-1002 ¶¶257-266.

Both Duarte and Biggs teach “a processing circuit specifically laid out so as to interpret the signals from the touch-sensitive glass,” as recited in Element 1[c]. Ex-1002 ¶¶258-59. Duarte’s touchscreen involves “a computer system, or similar electronic computing module and/or device” (Ex-1010, 10:27-36) that may include a single or multiple processors (*Id.*, 10:57-59).

Duarte also “interpret[s] the signals from the touch-sensitive [display] glass, for selecting a card from several available cards depending on these signals and for displaying said card.” The cards correspond to Duarte’s windows, which represent activities or applications. Ex-1002 ¶261. A user may drag windows left or right on the touch screen to select one window 301 from several available application windows 301, as shown in Figure 3. Ex-1010, 6:54-59, 6:64-7:17.

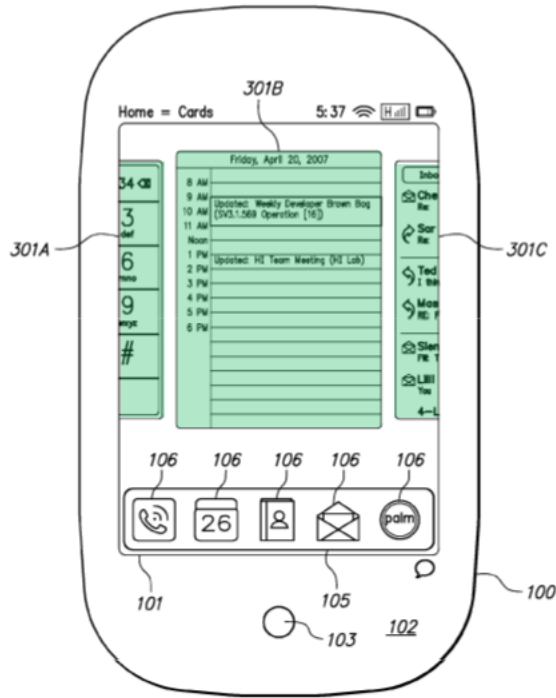


FIG. 3

Figure 7 shows switching from one window to another. *Id.*, 7:44-8:4

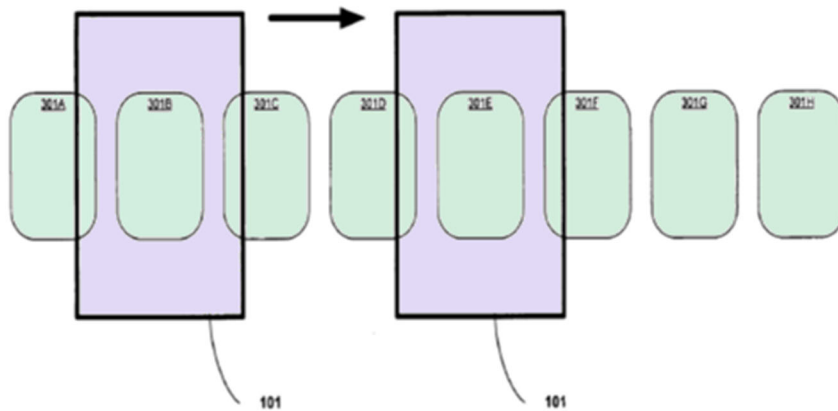
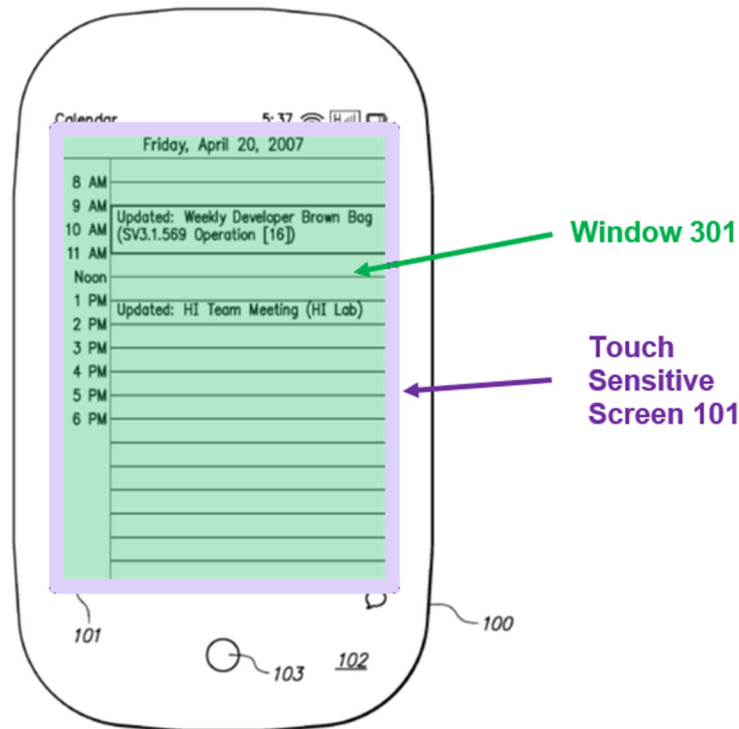


FIG. 7

And the selected card/window can be displayed on the “entire digital matrix display,” as shown in Figure 2. Ex-1002 ¶263.



Moreover, “a gesture can be performed *even in full-screen mode*, causing windows 301 to move left and right in the same manner as described above for windowed mode.” Ex-1010, 6:60-63. A POSITA would have been motivated to implement these teachings related to Duarte’s user interface designed for small screens into the watch form factor of Biggs. Ex-1002, ¶265.

- e. **Element 1[d]: wherein said touch-sensitive glass is a two-dimensional glass for detecting a movement of at least one finger at any place on the touch-sensitive glass along at least two different directions;**

Duarte-Biggs-Hotelling teaches Element 1[d]. Ex-1002 ¶¶267-71.

“Two-dimensional glass” refers to the surface of the touch-sensitive glass the user interacts with. Ex-1001, 2:7-23. As discussed for Element 1[b] (Section

XII.E.2.c), Duarte's touch-sensitive glass for interacting with windows has a two-dimensional surface. Ex-1002 ¶269.

Duarte teaches “detecting a movement of at least one finger at any place on the touch-sensitive glass along at least two different directions.” Ex-1002 ¶270. Duarte's “touch sensitive screen 101 ... can be implemented using any technology that is capable of *detecting a location of contact and/or user motion proximate to the surface*” (Ex-1010, 5:38-41), and a window can be given “focus by touching *any area* within the window” (*id.* 6:48-50). So a POSITA would have understood the touch-sensitive glass can detect finger movement at any place on the touch-sensitive glass. Ex-1002 ¶270. And that motion can be along two different directions: “when the *user drags a window 301 to the left or right* within display screen 100, other windows 301 move in concert with the dragged window 301” (Ex-1010, 6:64-67) and “*two or more axes of movements* can be made available” for window motion (*id.*, 3:44-48, 7:36-43).

- f. **Element 1[e]: wherein said processing circuit is specifically laid out so as to cause said several available cards to scroll past in order to lastingly replace the initially displayed card with a replacement card selected between said several available cards, wherein each card of said several available cards has a distinct fixed or periodically refreshed image,**

Duarte-Biggs-Hotelling teaches Element 1[e]. Ex-1002 ¶¶272-77.

As described above for Element 1[c] (Section XII.E.2.d), Duarte-Biggs-Hotelling teaches a processor configured to “cause said several available cards to scroll past.” Duarte also teaches “lastingly replac[ing] the initially displayed card with a replacement card selected between said several available cards,” as recited in Element 1[e]. For example, Figure 7 “depicts movement of the display screen 101 from an initial position where window 301B has focus (and windows 301A and 301C are partially visible) to a second position where window 301E is has focus (and windows 301D and 301F are partially visible).” Ex-1010, 7:51-56.

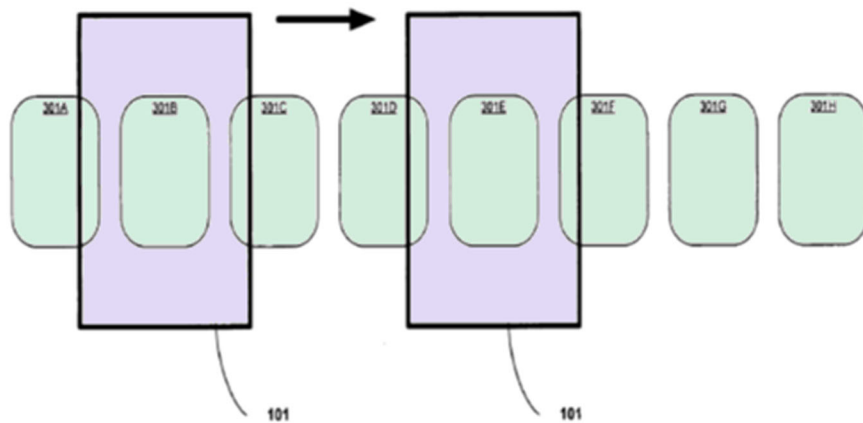


FIG. 7

When a user stops scrolling, new window 301E lastingly replaces the initial window 301B. Ex-1002 ¶275.

Duarte also teaches that each window has “a distinct fixed or periodically refreshed image.” Ex-1002 ¶276. Duarte’s windows “show applications or other

activities in operation.” Ex-1010, 7:18-21. To reflect the progress of the activities, windows 301 would be “periodically refreshed.” Ex-1002 ¶276.

- g. Element 1[f]: wherein the size of the image corresponds to the size of said digital matrix display so that the displayed card occupies the whole of said digital matrix display;**

Duarte-Biggs-Hotelling teaches Element 1[f]. Ex-1002 ¶¶278-80.

Duarte teaches that “in a full-screen mode, one activity occupies substantially an entire display screen.” Ex-1010, 2:62-63; *see also id.*, 6:3-19. Duarte also teaches that windows 301 can be scrolled in full-screen mode. *Id.*, 6:59-63.

- h. Element 1[g]: wherein one card of said several available cards and occupying the entire digital matrix display is immediately and without further user intervention replaced after the scrolling by a different card of said several available cards that occupies the entire digital matrix display;**

Duarte-Biggs-Hotelling teaches Element 1[g]. Ex-1002 ¶¶281-83.

As described for Element 1[c] (Section XII.E.2.d), Duarte teaches dragging windows in full-screen mode. Ex-1010, 6:60-63. Once a user drags a window “sufficiently close to the central position to make it clear that the intention is to give the window 301 focus, the window 301 snaps into the central position upon completion of the drag operation.” Ex-1010, 7:6-10. With full-screen scrolling,

this snap-into-central-position feature means one window replaces another on the entire display without further user intervention. Ex-1002 ¶282.

- i. **Element 1[h]: wherein said processing circuit is further laid out so that the replacement card is dependent from the initially displayed card and from the direction of said movement and is independent from the starting point and end point of said movement on said digital matrix display.**

Duarte-Biggs-Hotelling teaches Element 1[h]. Ex-1002 ¶¶284-87.

Duarte teaches that “the replacement card is dependent from the initially displayed card and from the direction of said movement.” *Id.* ¶285. When Duarte’s windows are dragged left or right, “a positional sequence is maintained” among windows. Ex-1010, 7:49-51; *see also id.*, 6:67-7:5. Thus, the replacement window depends on both the initially displayed window and the direction of the movement, as illustrated in Figure 7. Ex-1002 ¶285.

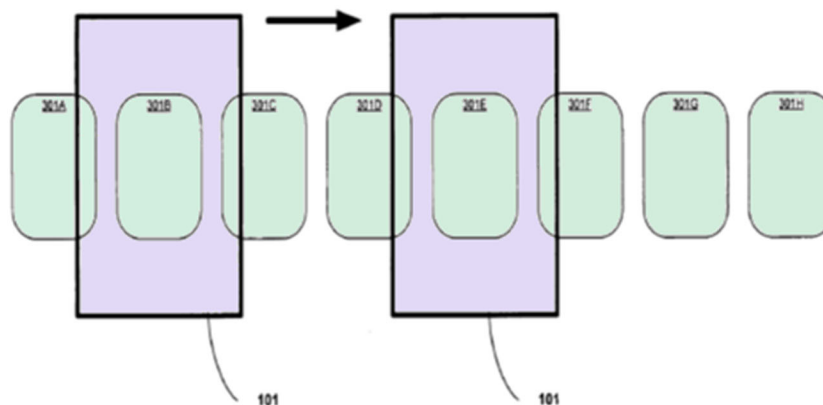


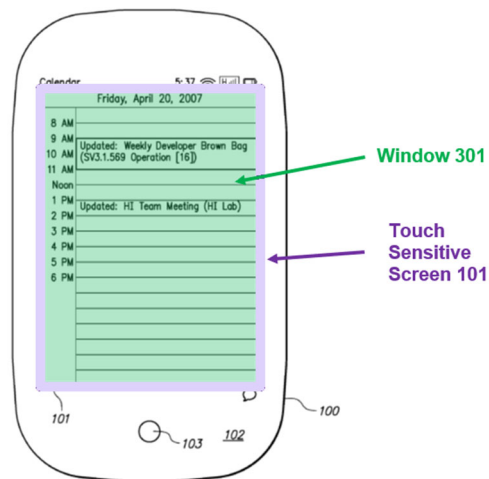
FIG. 7

Duarte also teaches that the replacement window is “independent from the starting point and end point of said movement on said digital matrix display.” Ex-1002 ¶286. First, Duarte describes dragging windows left and right—a description that focuses on the direction of the movement rather than touching any particular part of the screen. *See, e.g.*, Ex-1010, 3:31-36. Second, Duarte also describes a snap-into-central-position feature, making clear that the windows do not have to be dragged to a particular position. Ex-1010, 7:6-10. Thus, the replacement card is independent of the starting or ending point of the movement on the touchscreen.

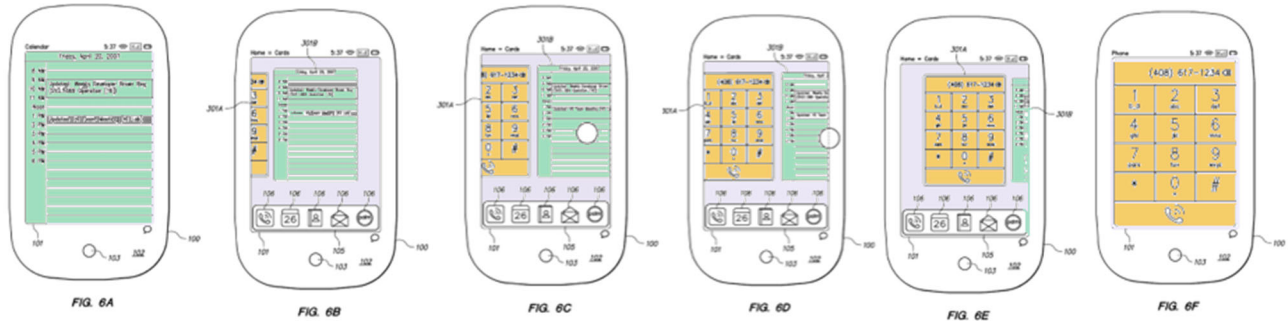
3. Dependent Claim 2: The wristwatch of claim 1, wherein each card shows a particular function of the wristwatch.

Duarte-Biggs-Hotelling teaches Claim 2. Ex-1002 ¶¶288-91.

Duarte teaches that each window “shows a particular function.” Ex-1002 ¶289. In Figure 2, window 301 shows “a calendar application.” Ex-1010, 6:3-7.



Additionally, Figures 6A-6F show switching from window 301B with a calendar application to window 301A with a telephone application.



4. **Dependent Claim 3: The wristwatch of claim 2, wherein each card defines the behavior of the touch-sensitive glass interface and the functions or modules that are to be launched depending on the movements of the finger on the card.**

Duarte-Biggs-Hotelling teaches Claim 3. Ex-1002 ¶¶292-95.

In Duarte, each window 301 defines “on-screen elements” with which the user interacts. Ex-1010, 6:15-19. For example, the telephone application in Figure 6F includes a dial pad where a user can enter telephone numbers and place a call.



FIG. 6F

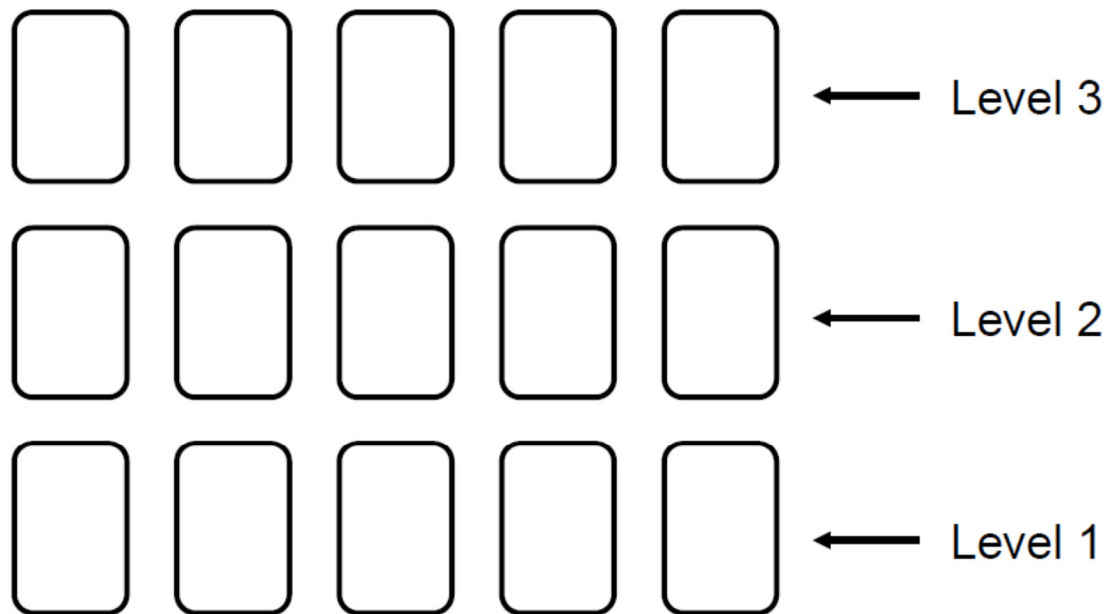
A POSITA would have understood that each window 301 defines the behavior of the touchscreen by specifying the portions of the screen with which a user can interact with his finger to invoke that widget's functionality. Ex-1002 ¶¶54-56, 294.

5. **Dependent Claim 4: The wristwatch of claim 2, wherein said cards are arranged in a plurality of levels, wherein the choice of a card within each level is made either by scrolling vertically or by scrolling horizontally, wherein a particular command makes it possible to switch from one level to another.**

Duarte-Biggs-Hotelling teaches Claim 4. Ex-1002 ¶¶296-302.

As discussed in Element 1[d] (Section XII.E.2.e), Duarte's windows can have a "two-dimensional arrangement." Ex-1010, 7:36-43, 3:62-65 ("The positional relationship can be a one-dimensional sequence *or some more complex two-dimensional relationship.*"); see also Ex-1002 ¶298. Dr. Bederson created the

following illustration to show what a POSITA would have understood Duarte's "two-dimensional arrangement" to look like based on this disclosure. Ex-1002 ¶299.



See Ex-1010, 7:36-43, Figs. 7, 8A, 8B. Each row corresponds to a different level, so windows are "arranged in a plurality of levels." Ex-1002 ¶300.

As discussed in Element 1[c] (Section XII.E.2.d), Duarte describes scrolling horizontally and vertically. Scrolling horizontally through windows in a row discloses "the choice of a card within each level is made ... by scrolling horizontally." Ex-1002 ¶301. And scrolling vertically to select one of the rows discloses "a particular command mak[ing] it possible to switch from one level to another." *Id.*

6. **Dependent Claim 5: The wristwatch of claim 4, wherein at least one of said cards makes it possible to calculate and display a simulation of a mechanical watch displaying the time, so as to enable the user to change the mechanical watch displayed by scrolling cards.**

Duarte-Biggs-Hotelling teaches Claim 5. Ex-1002 ¶¶303-07.

Biggs allows users to “create customized thematic time displays[,] which translate chronological time data ... into language and animation.” Ex-1012, 3:52-56. The user can customize the display background or the minute indicator. *Id.*, 7:10-18, 7:31-34. The user’s selections create an executable file. *Id.*, 5:17-22. By changing executable files, the user can change the display of time. *Id.*, 5:40-44, 8:59-65. Thus, a user can create different executable files for different displays of time.

These different displays of time could encompass a “simulation of a mechanical watch.” Biggs recognizes it was known to display rotating hour and minutes hands to indicate time. Ex-1012, 1:17-30. It would have been obvious to a POSITA to include such a mechanical watch as an available image a user could customize and display on the watch as taught by Biggs. Ex-1002 ¶305.

Moreover, given Duarte’s teaching of scrolling to switch cards as explained in Elements 1[c]-[d] (§XII.E.2.d-e), Duarte-Biggs-Hotelling also teaches enabling “the user to change the mechanical watch displayed by scrolling cards,” as recited in Claim 5. Ex-1002 ¶306. Duarte teaches that each window shows an

application. Ex-1012, 5:64-65. It would have been obvious to a POSITA that certain windows could correspond to executable files presenting a mechanical watch display (as taught in Biggs), and thus, scrolling windows (as taught in Duarte) “enable[s] the user to change the mechanical watch displayed.” Ex-1002 ¶¶51-59, 306.

7. Dependent Claim 6: The wristwatch of claim 1, wherein the processing circuit being laid out for detecting simultaneous contacts on several points of the touch-sensitive glass so as to constitute a multi-touch haptic screen.

Duarte-Biggs-Hotelling teaches Claim 6. Ex-1002 ¶¶308-13.

Duarte discloses a multi-touch display: “the user can drag a corner of a window 301 to resize it, or can use *two fingers* to pinch the edges or corners of a window 301 to resize it.” Ex-1010, 9:27-30.

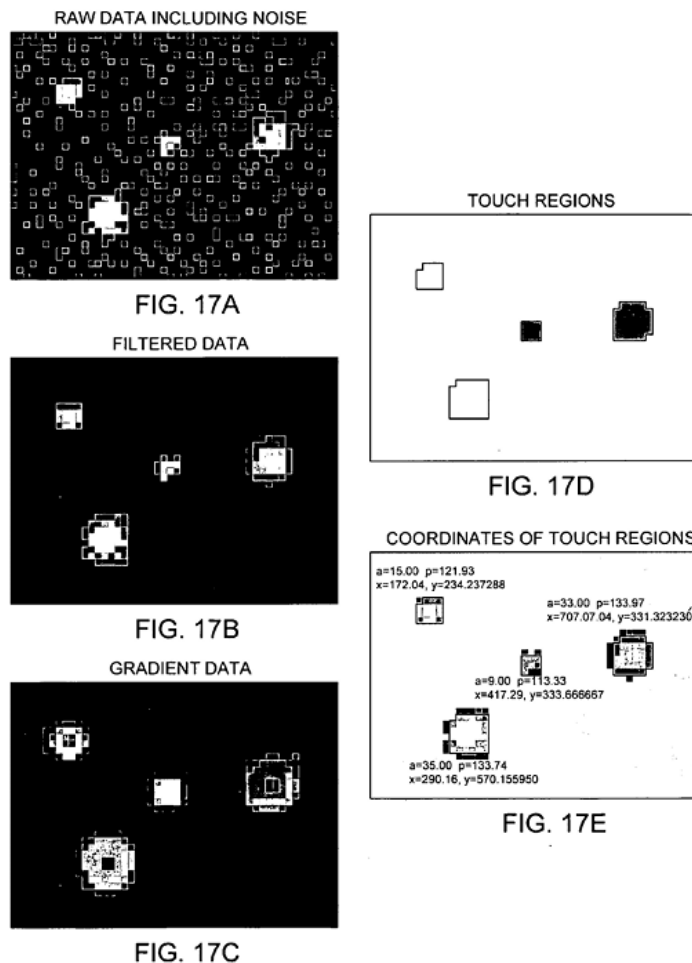
A POSITA would have understood a multi-touch display (as taught in Duarte) would require a “processing circuit being laid out for detecting simultaneous contacts on several points of the touch-sensitive glass so as to constitute a multi-touch haptic⁶ screen.” Ex-1002 ¶¶51-59, 312.

⁶ The ‘922 Patent use the term “haptic” screen or surface to mean touchscreen. *See supra* XII.A.5.

8. **Dependent Claim 7: The wristwatch of claim 1, wherein the processing circuit being laid out for determining the displacement of the center of gravity of the contact zone of the finger on the touch-sensitive glass.**

Duarte-Biggs-Hotelling teaches Claim 7. Ex-1002 ¶¶314-17.

Hotelling teaches “determining ... the displacement of the center of gravity of the contact zone of the finger on the ... touch-sensitive glass,” as recited in Claims 7 and 12. Hotelling describes “determining the center point for each touch region (e.g., centroid).” Ex-1006 ¶56; *see also id.* ¶¶101-04 (explaining calculation of a centroid). This process is shown in Hotelling’s Figures 17A-E:

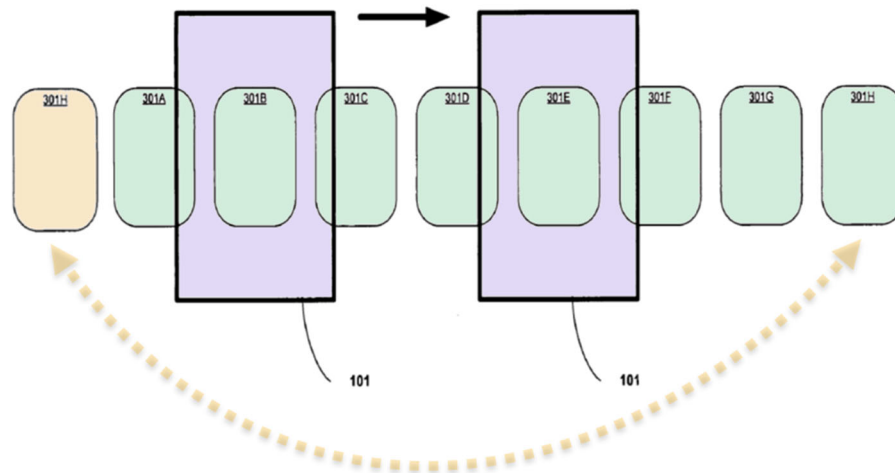


A POSITA would have understood this center point or centroid corresponds to the center of gravity. Ex-1002 ¶¶ 146-47, 316.

9. Dependent Claim 8: The wristwatch of claim 1, wherein said several available cards are organized in a virtual closed loop row or in a virtual closed loop column.

Duarte-Biggs-Hotelling teaches Claim 8. Ex-1002 ¶¶318-21.

Referring to Figure 7, Duarte discloses at least a virtual closed loop row: “In one embodiment, *the sequence is circular*, so that the rightmost window 301 [301H] is considered to be to the left of the leftmost window 301 [301A]. Thus, moving off one end of the sequence takes the user back to the other end of the sequence.” Ex-1010, 8:17-22; Ex-1002 ¶319.



10. Independent Claim 9

- a. Element 9[pre]: A method for replacing an initially displayed card displayed by a wristwatch by a replacement card, the method having the following steps:**

Biggs discloses “a wristwatch” for the same reasons as Element 1[pre] (§XII.E.2.a), and Duarte-Biggs teaches “replacing an initially displayed card displayed by a wristwatch by a replacement card” for the same reasons as Elements 1[c] (§XII.E.2.d) and 1[e] (§XII.E.2.f). Ex-1020, Element 9[pre]; Ex-1002 ¶322.

- b. Element 9[a]: detecting a direction of a movement of at least one finger at any place and along at least two different directions on a two-dimensional touch-sensitive glass;**

Duarte-Biggs-Hotelling teaches Element 9[a] for the same reasons as Elements 1[b] (§XII.E.2.c) and 1[d] (§XII.E.2.e). Ex-1020, Element 9[a]; Ex-1002 ¶¶323-24.

- c. **Element 9[b]: [1] scrolling on a digital matrix display of several available cards so as for said *scrolling to stop of itself so as to align an edge of the replacement card with an edge of the matrix display*, [2] wherein one card of said several available cards and occupying the entire digital matrix display is replaced after the scrolling, immediately and without further user intervention, by a different card selected between said several available cards and occupying the entire digital matrix display; [3] and wherein the scrolling direction depends only on the direction of said movement so that said replacement card is dependent from the initially displayed card and from the direction of said movement and is independent from the starting point and end point of said movement on said digital matrix display;**

Duarte-Biggs-Hotelling teaches Element 9[b]. Ex-1002 ¶¶325-28.

Louch teaches all but the *italicized* portion of Element 9[b][1] for the same reasons as Element 1[e] (§XII.A.1.f); Element 9[b][2] for the same reasons as Elements 1[f] (§XII.A.1.g) and 1[g] (§XII.A.1.h); and Element 9[b][3] for the same reasons as Element 1[h] (§XII.A.1.i). Ex-1020, Element 9[b].

Duarte also teaches the *italicized* portion of Element 9[b][1]: “scrolling to stop of itself so as to align an edge of the replacement card with an edge of the matrix display.” Ex-1002 ¶326. Specifically, window 301 may snap into a central position upon completion of the drag. Ex-1010, 7:6-17. Windows 301 may be scrolled left and right in full screen mode. Ex-1010, 6:59-63. A POSITA would have understood the combination of these two features results in the claimed

“scrolling to stop of itself so as to align an edge of the replacement card with an edge of the matrix display.” Ex-1002 ¶¶51-59, 326.

Accordingly, Duarte-Biggs-Hotelling teaches Element 9[b]. Ex-1002 ¶328.

- d. Element 9[c]: [1] lastingly displaying the replacement card on the whole of said digital matrix display, wherein each card of said several available cards has a distinct fixed or periodically refreshed image, [2] the size of the images corresponding to the size of said digital matrix display.**

Louch teaches Element 9[c][1] for the reasons as Element 1[e] (§XII.A.1.f) and teaches Element 9[c][2] for the same reasons as Element 1[f] (§XII.A.1.g). Ex-1020, Element 9[c]; Ex-1002 ¶329.

- 11. Dependent Claim 10: The method of claim 9, further including the entering of a touch command for confirming or stopping the scrolling.**

Duarte-Biggs-Hotelling teaches Claim 10. Ex-1002 ¶330-33.

Duarte discloses that in one embodiment, a user may drag a window part of the way toward the center of the screen, the window will snap to the central position. Ex 1010, 7:6-17. A POSITA would have understood that momentarily pausing the dragging movement and lifting of the finger off the touchscreen is “a touch command for confirming or stopping the scrolling,” as recited in Claim 10. Ex-1002 ¶¶56-58, 331, 333.

In an embodiment without the snap-to-center feature, a user, while scrolling, can touch a partially displayed window to cause it to gain focus and move to the

center. Ex-1010, 3:31-36, 7:60-8:4. This is also a “touch command for confirming or stopping the scrolling.” Ex-1002 ¶333.

12. Dependent Claim 11: The method of claim 9, further comprising the detecting of simultaneous contacts on several points of the two-dimensional touch-sensitive glass.

Duarte-Biggs-Hotelling teaches Claim 11 for the same reasons as Claim 6 (§XII.E.7). Ex-1020, Cl. 11; Ex-1002 ¶334.

13. Dependent Claim 12: The method of claim 9, further comprising the determining of the displacement of the center of gravity of the contact zone of the finger on the two-dimensional touch-sensitive glass.

Duarte-Biggs-Hotelling teaches Claim 12 for the same reasons as Claim 7 (§XII.E.8). Ex-1020, Cl. 7; Ex-1002 ¶335.

14. Dependent Claim 13: The method of claim 9, wherein the different cards scroll in continuous fashion on the digital matrix display, the scrolling being interrupted so as to align the edge of a card with the edge of the digital matrix display.

Duarte-Biggs-Hotelling teaches Claim 13 for the same reasons as Element 1[e] (§XII.E.2.f) and Element 9[b][1] (§XII.E.10.c). Ex-1020, Cl. 13; Ex-1002 ¶336.

15. Dependent Claim 17: The method of claim 13, wherein the card scrolling is interrupted by a brief pressure on the two-dimensional touch-sensitive, so as to cause the card best centered on the display at the time of the interruption to be selected and displayed.

Duarte-Biggs-Hotelling teaches Claim 17. Ex-1002 ¶¶337-38.

As described above for Claim 10 (§XII.E.11), Duarte describes scrolling windows. Ex-1010, 6:64-7:5. In embodiments without the snap feature, if the user were to stop scrolling, a user can touch a partially displayed window to cause it to gain focus and move to the center. Ex-1010, 3:31-36, 7:60-8:4. A POSITA would have recognized that this touch is a “brief pressure on the two-dimensional touch-sensitive” screen that would interrupt the scrolling and “cause the card best centered on the display at the time of the interruption to be selected and displayed.” Ex-1002 ¶¶56-59, 338.

16. Dependent Claim 18: The method of claim 9, wherein the size of the displayed cards is reduced during scrolling, so as to display several cards simultaneously.

Duarte-Biggs-Hotelling teaches Claim 18. Ex-1002 ¶¶339-43.

Duarte describes windowed mode, in which “the size of the displayed cards is reduced during scrolling, so as to display several cards simultaneously.” Ex-1010, 8:5-9; Ex-1002 ¶340. Figures 3, 6B-E, and 7 show several cards displayed simultaneously.

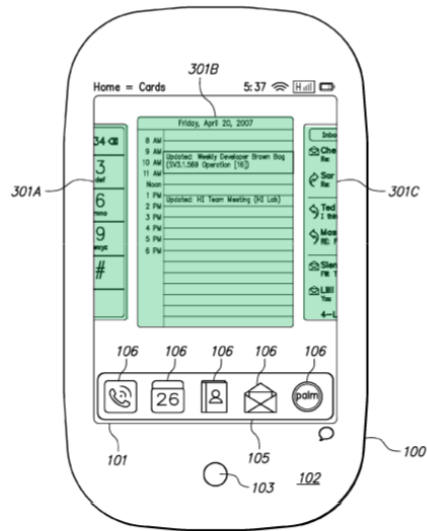


FIG. 3

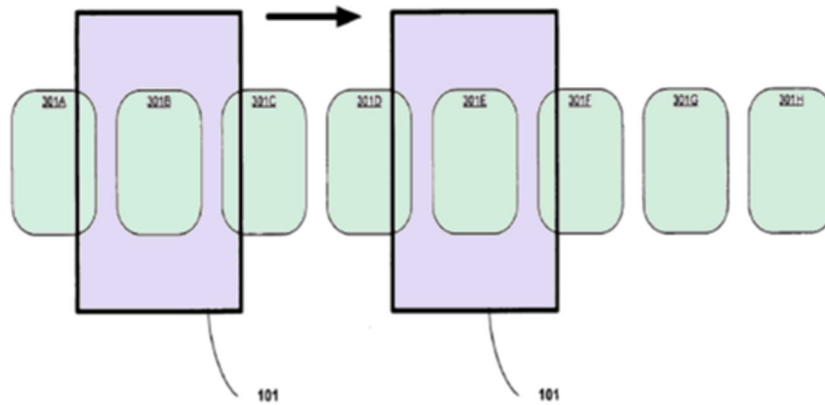
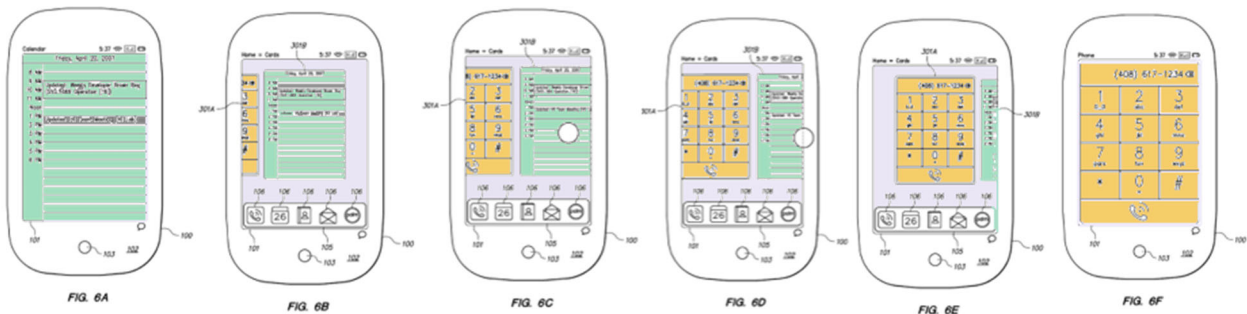


FIG. 7

Duarte further discloses an embodiment which, after scrolling stops, “return[s] to full-screen mode automatically.” Ex-1010. 3:49-56. In this

embodiment, it is obvious that windows 301 are reduced during scrolling. Ex-1002 ¶341.

Moreover, Duarte teaches changing the size of windows during scrolling: “In one embodiment, the window 301 that is centrally displayed at any given time is shown slightly larger than other windows 301.” Ex-1010, 8-9. Based on this teaching, it would have been obvious to a POSITA that the size of windows 301 could be reduced during scrolling in full-screen mode, so as to display several cards simultaneously. Ex-1002 ¶¶56-59, 342.

- 17. Dependent Claim 19: The method of claim 9, wherein said cards are arranged in a plurality of levels, wherein the method comprises a step of vertical or horizontal scrolling and a step of entering a particular command for switching from one level to another.**

Duarte-Biggs-Hotelling teaches Claim 19 for the same reasons as Claim 4 (§XII.E.5). Ex-1020, Cl. 19; Ex-1002 ¶344.

- 18. Dependent Claim 20: The method of claim 9, wherein a plurality of said cards displays a simulation of a virtual mechanical movement.**

Duarte-Biggs-Hotelling teaches Claim 20 for the same reasons as Claim 5 (§XII.E.6). Ex-1020, Cl. 20; Ex-1002 ¶345.

19. Dependent Claim 21: The method of claim 9, wherein said several available cards are organized in a virtual closed loop row or in a virtual closed loop column.

Duarte-Biggs-Hotelling teaches Claim 21 for the same reasons as Claim 8 (§XII.E.9). Ex-1020, Cl. 21; Ex-1002 ¶346.

20. Dependent Claim 22: The method of claim 9, wherein said several available cards are organized in a virtual closed loop row and in a virtual closed loop column.

Duarte-Biggs-Hotelling teaches Claim 22. Ex-1002 ¶347-50.

As described above in Element 1[d] (§XII.E.2.e), Duarte discloses that windows can be in a two-dimensional arrangement that can be scrolled vertically or horizontally. Ex-1002 ¶349. Duarte also discloses a closed-loop sequence in which the last window cycles back to the first window (and vice-versa). Ex-1010, 8:17-22;⁷ *see supra* §XII.E.9. Thus, Duarte teaches window 301 “organized in a virtual closed loop row and in a virtual closed loop column.” Ex-1002 ¶349.

21. Independent Claims 23 and 24

a. Elements 23[pre] and 24[pre]: A wristwatch having:

To the extent the preamble is limiting, Duarte-Biggs-Hotelling teaches the preamble for the same reasons as Element 1[pre] (§XII.E.2.a). Ex-1020, Elements 23[pre], 24[pre]; Ex-1002 ¶¶351, 360.

⁷ To the extent that PO contends that this example is limited to rows, it would have been obvious to a POSITA that the same closed-loop sequence could be applied to columns. Ex-1002 ¶¶51-59, 349.

b. Elements 23[a] and 24[a]: a digital matrix display;

Duarte-Biggs-Hotelling teaches Elements 23[a] and 24[a] for the same reasons as Element 1[a] (§XII.E.2.b). Ex-1020, Elements 23[a], 24[a]; Ex-1002 ¶¶352, 361.

c. Elements 23[b] and 24[b]: a sheet of touch-sensitive glass;

Duarte-Biggs-Hotelling teaches Elements 23[b] and 24[b] for the same reasons as Element 1[b] (§XII.E.2.c). Ex-1020, Elements 23[b], 24[b]; Ex-1002 ¶¶353, 362.

d. Elements 23[c]: [1] a processing circuit specifically laid out so as to interpret the signals from the touch-sensitive glass, for selecting a card from several available cards depending on these signals and for displaying said card on the entire digital matrix display, [2] wherein each card has a distinct fixed or periodically refreshed image;

Element 24[c]: a processing circuit specifically laid out so as to interpret the signals from the touch-sensitive glass, for selecting a card from several available cards depending on these signals and for displaying said card on the entire digital matrix display;

Duarte-Biggs-Hotelling teaches Elements 23[c][1] and 24[c] for the same reasons as Element 1[c] (§XII.E.2.d) and teaches Element 23[c][2] for the same reasons as Element 1[e] (§XII.E.2.f). Ex-1020, Elements 23[c], 24[c]; Ex-1002 ¶¶354, 363.

- e. **Elements 23[d] and 24[d]: wherein said touch-sensitive glass is a two-dimensional glass for detecting a movement of at least one finger at any place on the touch-sensitive glass along at least two different directions;**

Duarte-Biggs-Hotelling teaches Elements 23[d] and 24[d] for the same reasons as Element 1[d] (§XII.E.2.e). Ex-1020, Elements 23[d], 24[d]; Ex-1002 ¶¶355, 364.

- f. **Element 23[e]: [1] wherein said processing circuit is specifically laid out so as to cause said several available cards to scroll past by *displaying the image of said cards one at a [time] on the digital matrix display* in order to lastingly replace the initially displayed card with a replacement card selected within said several available cards, [2] immediately after the scrolling and without further user intervention;**

Element 24[e]: wherein said processing circuit is specifically laid out so as to cause cards to scroll past in order to lastingly replace the initially displayed card with a replacement card, wherein each card has a fixed or periodically refreshed image;

Duarte-Biggs-Hotelling teaches Element 24[e] and all but the *italicized* portion of 23[e][1] for the same reasons as Elements 1[e] (§XII.E.2.f) and teaches Element 23[e][2] for the same reasons as Element 1[g] (§XII.E.2.h). Ex-1020, Elements 23[e], 24[e]; Ex-1002 ¶¶356-57, 365.

Duarte discloses the *italicized* portion of Element 23[e][1] (“displaying the image of said cards one at a on the digital matrix display”): “For example, the user

can repeatedly drag windows 301 in a leftward direction to cause windows 301C, 301D, and 301E to *successively* occupy the central position.” Ex-1010, 7:60-63.

- g. Elements 23[f] and 24[f]: wherein the size of the image corresponds to the size of said digital matrix display so that the displayed card occupies the whole of said digital matrix display;**

Duarte-Biggs-Hotelling teaches Elements 23[f] and 24[f] for the same reasons as Element 1[f] (§XII.2.F.g). Ex-1020, Elements 23[f], 24[f]; Ex-1002 ¶¶358, 366.

- h. Elements 23[g] and 24[g]: wherein said processing circuit is further laid out so that the replacement card is dependent from the initially displayed card and from the direction of said movement and is independent from the starting point and end point of said movement on said digital matrix display**

Duarte-Biggs-Hotelling teaches Elements 23[g] and 24[g] for the same reasons as Element 1[h] (§XII.E.2.i). Ex-1020, Elements 23[g], 24[g]; Ex-1002 ¶¶359, 367.

- i. Element 24[h]: wherein said several available cards are organized in a virtual closed loop row and in a virtual closed loop column**

Duarte-Biggs-Hotelling teaches Element 24[h] for the same reasons as Claim 22 (§XII.E.20). Ex-1020, Elements 24[h]; Ex-1002 ¶368.

F. Ground 6: Claims 14-16 are obvious over the combination of Duarte, Biggs, and Hotelling in further view of Louch.

- 1. A POSITA would have been motivated to combine Duarte, Biggs, and Hotelling's teachings with Louch's teachings and would have had a reasonable expectation of success.**

For the reasons described above (§XII.E.1), it would have been obvious to a POSITA to combine the teachings of Duarte, Biggs, and Louch to enable the scrolling of windows described in Duarte on the touchscreen wristwatch of Biggs with selectable customized time displays. Ex-1002 ¶¶51-59, 369.

It would have been obvious to further combine the teachings of Louch. Ex-1002 ¶370. Louch discloses a digital wristwatch like the one in Biggs. Ex-1005 ¶49. Like Duarte (Ex-1010, 5:38-41, 6:59-7:17), Louch describes scrolling widgets by moving a finger horizontally or vertically across a touchscreen (Ex-1005 ¶¶79, 80). Louch further teaches various scrolling “animation[s] are possible.” Ex-1005 ¶87. For example, “[t]he speed of the scrolling is controlled by the speed of the finger gestures made by the user.” *Id.* And “[t]he scrolling can be animated to give the impression of friction or other properties. For example, the user can make a single touch and gesture and widgets will be continuously scrolled by the display 514 in a Rolodex® manner and slowly de-accelerate to a stop.” *Id.*

Because Duarte and Louch both describe scrolling cards on a touchscreen, it would have been obvious to a POSITA to apply the scrolling animations of Louch to the scrolling of windows in Duarte. Ex-1002 ¶¶56-58, 371. Duarte teaches that

“a transition effect is performed to enhance the smoothness of the transition as windows 301 move and/or snap into place.” Ex-1010, 8:5-9. A POSITA would have recognized Louch’s scrolling animations are examples of “transition effects” as taught in Duarte, and thus, a POSITA would have been motivated to apply Louch’s animations to the scrolling in Duarte to enhance the user experience by mimicking real-world effects (variable speed and friction) that are already familiar to users. Ex-1002 ¶¶56-59, 372-73. Thus, design incentives and market forces would have motivated a POSITA to apply the teachings of Louch to the Duarte-Biggs-Hotelling combination of a wristwatch with a touchscreen. *Id.*

2. Dependent Claim 14: The method of claim 13, wherein the card scrolling speed or amplitude depend on the speed or amplitude of movement of the finger on the two-dimensional touch-sensitive glass.

Duarte-Biggs-Hotelling-Louch teaches Claim 14. Ex-1002 ¶374-75.

Louch states: “Scrolling can be horizontal, vertical and diagonal. The *speed of the scrolling is controlled by the speed of the finger gestures* made by the user.” Ex-1005 ¶87.

3. Dependent Claim 15: The method of claim 14, wherein the card scrolling speed is variable, the scrolling being slowed down before stopping completely.

Duarte-Biggs-Hotelling-Louch teaches Claim 15. Ex-1002 ¶376-77.

Louch teaches scrolling animations that “give the impression of friction or other properties.” Ex-1005 ¶87. For example, “the user can make a single touch

and gesture and widgets will be continuously scrolled by the display 514 in a Rolodex® manner and *slowly de-accelerate to a stop.*” *Id.* ¶87.

4. Dependent Claim 16: The method of claim 15, wherein the card scrolling speed is variable, the scrolling being slowed down each time a card is switched to another one.

Duarte-Biggs-Hotelling-Louch teaches Claim 16. Ex-1002 ¶378-81.

Duarte-Biggs-Hotelling-Louch teaches “the card scrolling speed is variable” for the same reasons as Claim 15 (§XII.F.3). Ex-1020, Cl. 16; Ex-1002 ¶379.

Louch also discloses “the scrolling being slowed down each time a card is switched to another one.” Louch states that widgets scroll “in a Rolodex® manner and slowly de-accelerate to a stop.” Ex-1005 ¶87. In a Rolodex, the cards flip one after the other and slow down as each one is flipped due to friction, which Louch teaches to mimic. Ex-1002 ¶380. In other words, the scrolling is “slowed down each time a card is switched to another one” as recited in Claim 16. *Id.*

Thus, all claims of the ’922 Patent are rendered obvious.

XIII. THE BOARD SHOULD NOT USE ITS DISCRETION TO DENY INSTITUTION UNDER *FINTIV*.

The Board should decline to exercise its discretion to deny institution under 35 U.S.C. § 314(a). While Director Vidal’s June 21, 2022 Guidance made clear that “*Fintiv* is limited to facts of that case,” for completeness, Petitioner addresses the factors set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB

Mar. 20, 2020) (precedential). As explained below, the six factors set out in *Fintiv* do not justify denying institution.

The **first *Fintiv* factor** is neutral here because Samsung has not yet moved to stay the district court proceedings pending IPR, and the PTAB will not infer how the district court would rule should a stay be requested. *See, e.g., Hulu LLC v. SITO Mobile R&D IP, LLC et al.*, IPR2021-00298, Paper 11 at 10-11 (PTAB May 19, 2021).

For the **second *Fintiv* factor**, the district court has set February 18, 2025 as the trial date in the *Samsung* matter. Even if trial proceeds in February 2025, the above timing does not tip in favor of denying the petition in this case. *See, e.g., Apple Inc. v. Koss Corp.*, IPR2021-00305, Paper 14, 13 (PTAB June 3, 2021). This Petition is filed in October 2023. An institution decision should be issued within six months of docketing, around April 2024. And a final written decision (FWD) should be issued in April 2025. Thus, the earliest estimated trial date is around the same time as the FWD. Recent PTAB cases analyzing similar schedules have weighed the second factor as neutral or, at most, slightly in favor of denial. *See, e.g., Google LLC et al. v. Parus Holdings, Inc.*, IPR2020-00847, Paper 9, 12 (PTAB Oct. 21, 2020) (trial scheduled for three months before FWD weighs “at best, neutral”); *Apple Inc. v. Koss Corp.*, IPR2021-00305, Paper 14, 13-14 (PTAB

June 3, 2021) (trial scheduled for two months before FWD weighs “at most, minimally in favor” of denial).

The **third *Fintiv* factor** weighs strongly against denial. No hearing has been set and no substantive activity has occurred in the case. Because the investment in the trial has been minimal and Petitioner acted diligently, filing this Petition within two months of being served with infringement contentions, this factor weighs strongly against discretionary denial. *See, e.g., Hulu*, Paper 11, 13.

The **fourth *Fintiv* factor** also weighs against denial. As explained above, a FWD in this matter will occur within about two months of the currently-scheduled trial in the district court (assuming it holds to that date). Thus, “there is a reasonable likelihood that the Board will address the overlapping validity issues prior to the district court reaching them at trial..., thereby providing the possibility of simplifying issues for trial.” *Juniper Networks, Inc. v. Packet Intelligence LLC*, IPR2020-0039, Paper 21, 18 (PTAB Sept. 10, 2020); *see also MED-EL Elektromedizinische Geraete GmbH v. Sonova AG*, IPR2020-00176, Paper 13, 15 (PTAB June 3, 2020) (“[Overlap exists between the invalidity issues in this case and in the district court. This overlap may inure to the district court’s benefit, however, by simplifying issues for trial should we reach our determination on the challenges raised in the Petition before trial.]”).

On the **fifth *Fintiv* factor**, the Board should give little weight to the fact that Petitioner and PO are the same parties as in district court. *See Weatherford U.S., L.P., v. Enventure Global Tech., Inc.*, Paper 16, 11-13 (PTAB Apr. 14, 2021). Although Samsung is both petitioner and litigation defendant, this factor does not outweigh the other factors that strongly weigh against discretionary denial.

“Other circumstances” under the **sixth *Fintiv* factor** further weigh against discretionary denial. The merits of the Petition are especially strong, with Louch alone rendering most claims obvious. *See Align Tech., Inc. v. 3Shape A/S*, IPR2020-01087, Paper 15, 42-43 (PTAB Jan. 20, 2021). *See supra* §XII.

Taken together holistically, the *Fintiv* factors strongly weigh against denial.

XIV. CONCLUSION

Petitioner requests institution of IPR for Claims 1-24 of the '922 Patent based on each of the grounds in this Petition.

Respectfully Submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioner certifies that this petition includes 13,859 words, as measured by Microsoft Word, exclusive of the table of contents, mandatory notices under § 42.8, certificates of service, word count, and exhibits.

CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))

The undersigned hereby certifies that the above document was served on October 9, 2023, by filing this document through the Patent Trial and Appeal Board P-TACTS System, as well as delivering a copy via express mail upon the following attorneys of record for the Patent Owner and Petitioner:

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