

APPLE INC. (Petitioner)
v.
SMITH INTERFACE TECHNOLOGIES, LLC (Patent Owner)

PETITIONER'S DEMONSTRATIVES

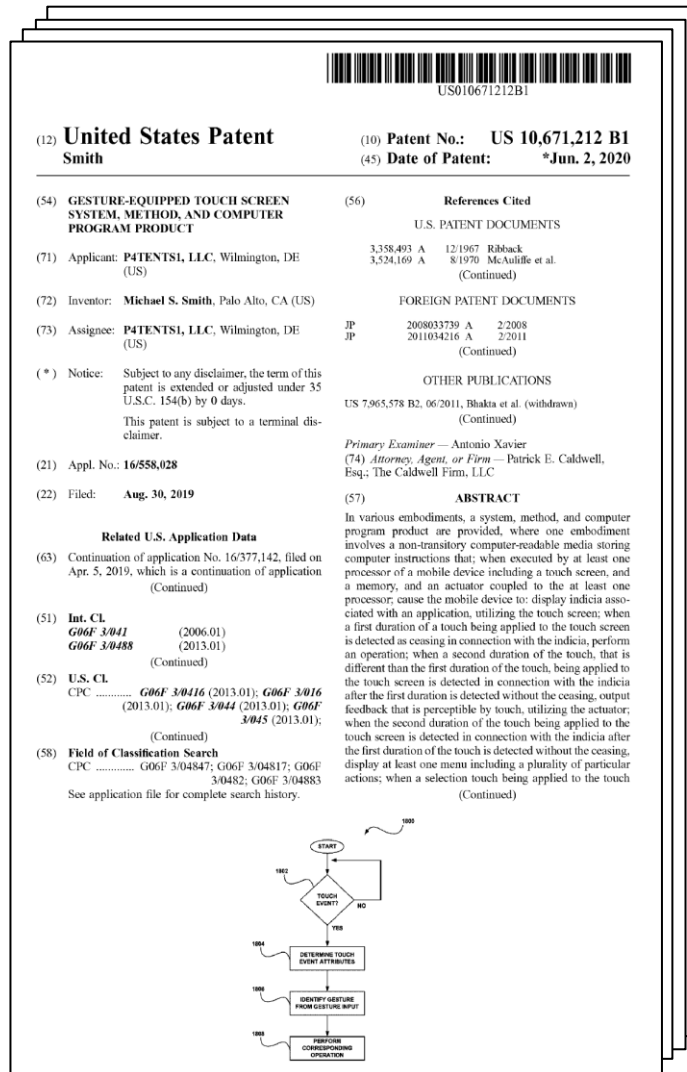
Case No. IPR2024-01089
U.S. Patent No. 10,671,212
Before JAMESON LEE, MIRIAM L. QUINN, and SHARON FENICK
Administrative Patent Judges

APPLE 1115
Apple v. Smith Interface
IPR2024-01089

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Overview: The '212 Patent – The Challenge



- Challenged Claims: **1-2, 9-11, 13-15, 16, 56-64, 84**
- Independent Claims **1/16/84** rise and fall together
- Dependent Claims **14-15, 61-64** argued

Ground	Claims	Basis for Rejection
1	1-2, 9-11, 13-15, 16, 58-64, 84	§103–Hotelling (US 2006/0197753), Martyn (US 2004/0051726), and Cho (US 2011/0252362)
2	56-57	§103–Hotelling, Martyn, Cho, and Chaudhri (US 2011/0252380)

Overview: The '212 Patent – Claim 1

Pet. 4-5

US010671212B1

(12) **United States Patent**
Smith

(10) **Patent No.:** US 10,671,212 B1
(45) **Date of Patent:** *Jun. 2, 2020

(54) **GESTURE-EQUIPPED TOUCH SCREEN SYSTEM, METHOD, AND COMPUTER PROGRAM PRODUCT**

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(72) Inventor: **Michael S. Smith**, Palo Alto, CA (US)

(73) Assignee: **P4TENTSI, LLC**, Wilmington, DE (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
This patent is subject to a terminal disclaimer.

(21) Appl. No.: **16/558,028**

(22) Filed: **Aug. 30, 2019**

Related U.S. Application Data

(63) Continuation of application No. 16/377,142, filed on Apr. 5, 2019, which is a continuation of application (Continued)

(51) **Int. CL**
G06F 3/041 (2006.01)
G06F 3/0488 (2013.01)
(Continued)

(52) **U.S. CL**
CPC **G06F 3/0416** (2013.01); **G06F 3/016** (2013.01); **G06F 3/044** (2013.01); **G06F 3/045** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC **G06F 3/04847**; **G06F 3/04817**; **G06F 3/0482**; **G06F 3/04883**
See application file for complete search history.

(56) **References Cited**
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Primary Examiner — Antonio Xavier
(74) **Attorney, Agent, or Firm** — Patrick E. Caldwell, Esq.; The Caldwell Firm, LLC

(57) **ABSTRACT**
In various embodiments, a system, method, and computer program product are provided, where one embodiment involves a non-transitory computer-readable media storing computer instructions that; when executed by at least one processor of a mobile device including a touch screen, and a memory, and an actuator coupled to the at least one processor; cause the mobile device to: display indicia associated with an application, utilizing the touch screen; when a first duration of a touch being applied to the touch screen is detected as ceasing in connection with the indicia, perform an operation; when a second duration of the touch, that is different than the first duration of the touch, being applied to the touch screen is detected in connection with the indicia after the first duration is detected without the ceasing, output feedback that is perceptible by touch, utilizing the actuator; when the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, display at least one menu including a plurality of particular actions;

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Overview: The '212 Patent – Claim 1

Pet. 4-5

First Duration Scenario

when a first duration of a touch being applied to the touch screen is detected as ceasing in connection with the indicia, perform an operation;

***When First Touch Duration Ceases,
Perform an Operation***

Overview: The '212 Patent – Claim 1

Pet. 4-5

Second Duration Scenario

when a **second duration** of the touch, that is different than the first duration of the touch, being applied to the touch screen **is detected** in connection with the indicia after the first duration is detected without the ceasing, **output feedback** that is perceptible by touch, utilizing the actuator;

when the **second duration** of the touch being applied to the touch screen **is detected** in connection with the indicia after the first duration of the touch is detected without the ceasing, **display at least one menu** including a plurality of particular actions;

***When Second Touch Duration Is Detected,
Output Feedback and Display Menu***

Overview: The '212 Patent – Claim 1

Pet. 4-5

First Menu Interaction

when a selection touch being applied to the touch screen is detected in connection with at least one of the particular actions of the at least one menu after the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, perform the at least one particular action; and

***When Menu Selection Touch Is Detected,
Perform Particular Action***

Overview: The '212 Patent – Claim 1

Pet. 4-5

Second Menu Interaction

when a slide or swipe gesture being applied to the touch screen is detected after the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, change at least one aspect of the display of the at least one menu.

***When Slide or Swipe Is Detected,
Change Menu Display Aspect***

Overview: The Prior Art References

Pet. 7-11

Hotelling

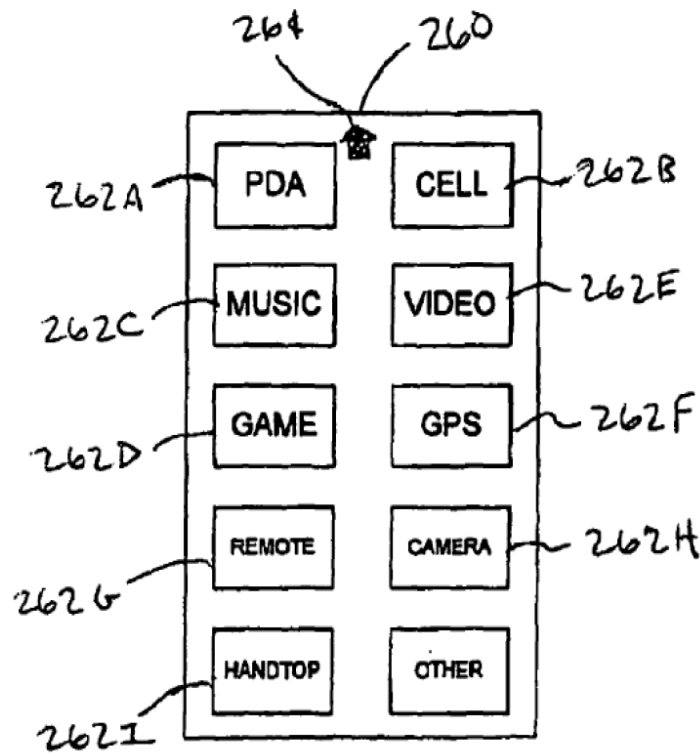


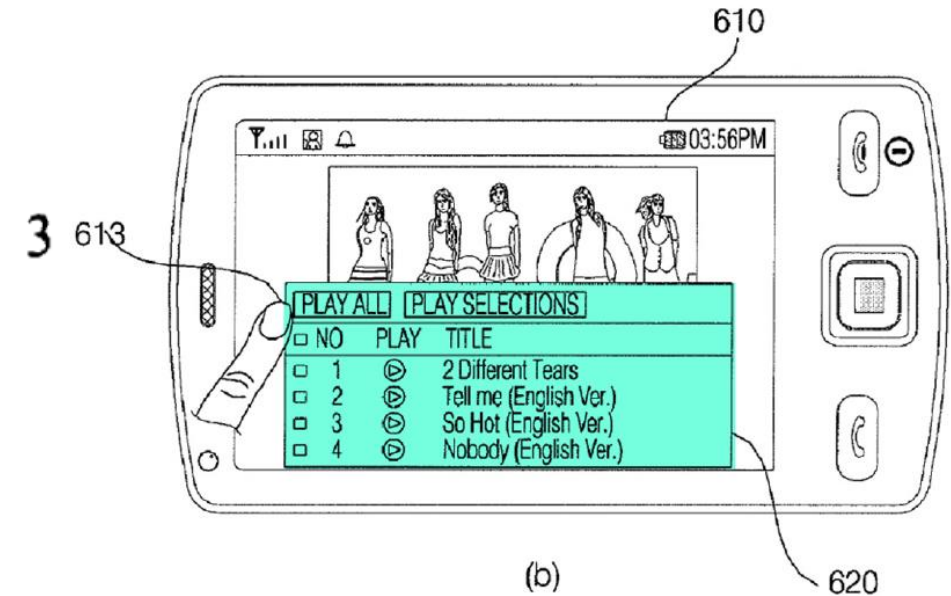
FIG. 18

Martyn



Figure 2

Cho



(b)

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Overview: The Prior Art Combination

Pet. 11-20

PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT NO. 10,671,212 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

compared to traditional desktop computers. Accordingly, the Hotelling-Martyn-Cho Combination represents the predictable and expected result of applying in the context of Hotelling's touch screen mobile device: [a] Martyn's teachings about providing a contextual shortcut menu of common application functions in response to a press-and-hold user input associated with an application icon, which builds on Hotelling's similar disclosure of a pop-up contextual menu invoked by a long-touch gesture; and [b] Cho's teachings about using slide/swipe touch gestures to manipulate information windows, which builds on Hotelling's similar disclosure of using those same gestures for manipulating GUI elements. EX1003, ¶73.

Pet. 12-13

Hotelling

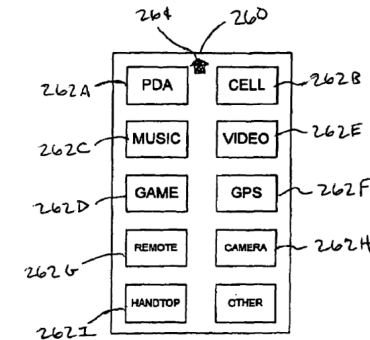


FIG. 18

Martyn

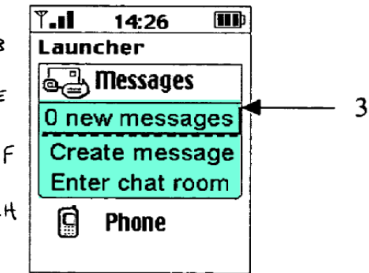
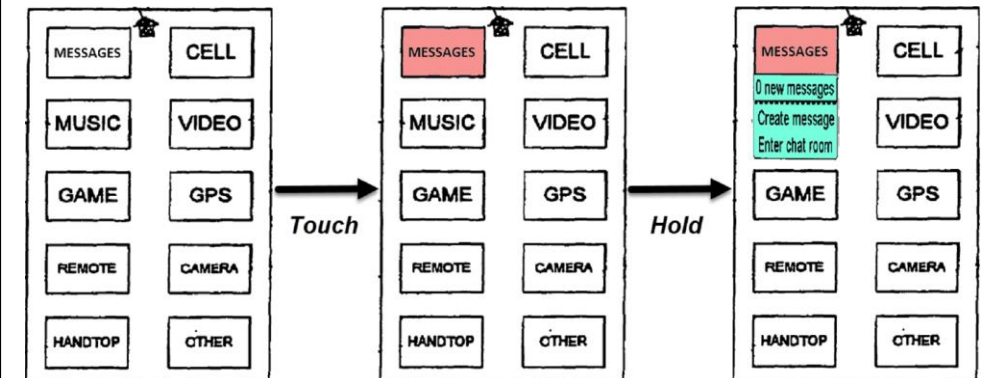
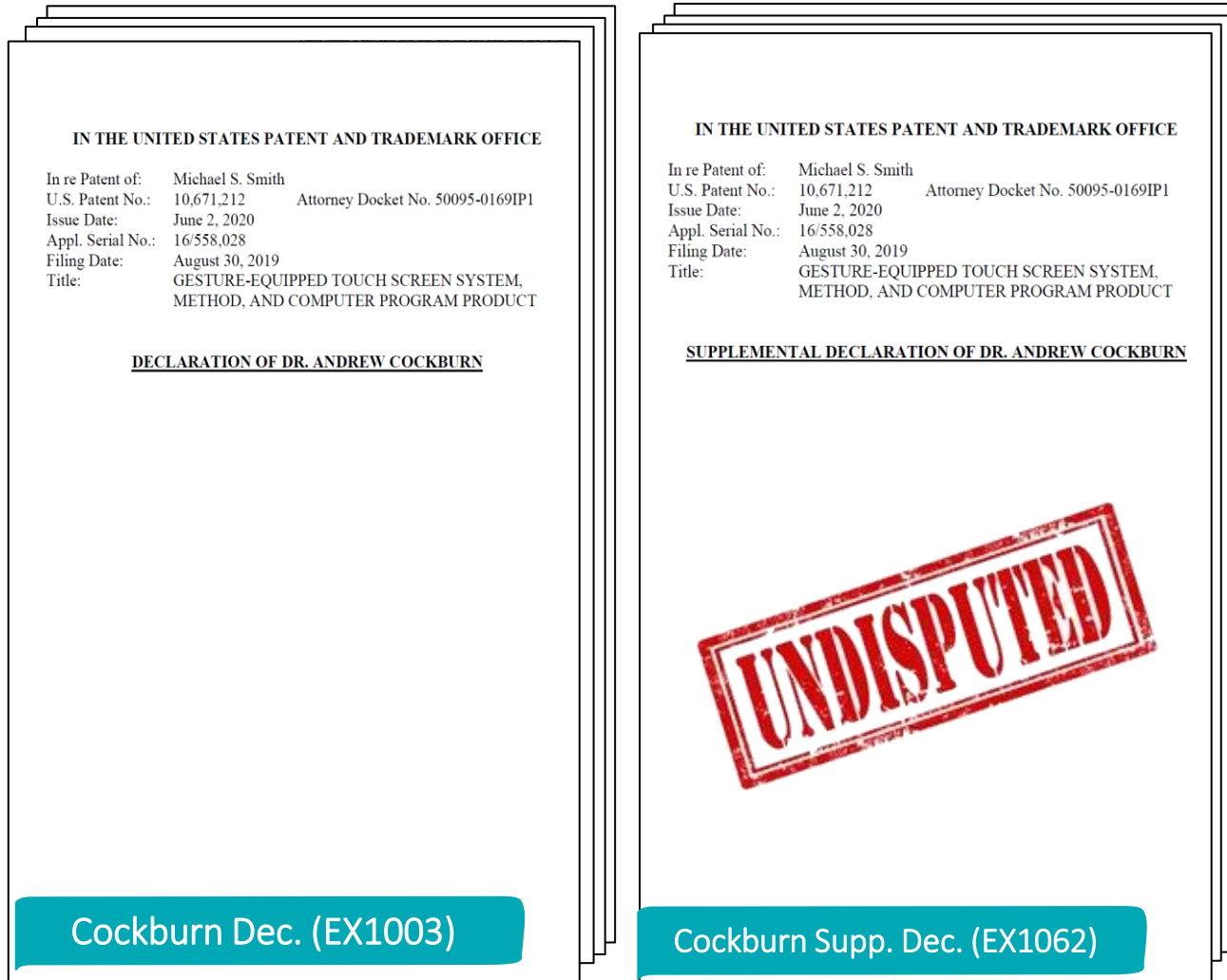


Figure 2

The Hotelling-Martyn



Overview: Petitioner's Expert—Dr. Cockburn



- Reflects over 30 years of experience, including gesture-based techniques for mobile device GUIs
- Provides detailed descriptions of a POSITA's background knowledge and the state of the art (EX1003, ¶¶36-60)
- Buttressed by more than 30 corroborating exhibits

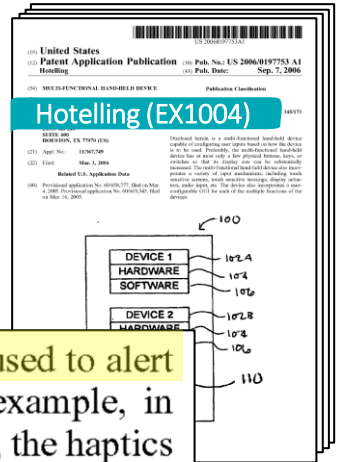
Second Duration Scenario

Hotelling Shows Pairing Tactile Feedback With a Long Duration Touch Was Known and Obvious
(Elements [1.c], [16.h], [84.d])

1st Duration Scenario [1.c] – Hotelling Teaches and Renders Obvious

Pet. 26-29
Reply 2-8

Hotelling Teaches “Long” Touch Inputs and Tactile Feedback to Confirm Touch Inputs



PETITION FOR INTER PARTES REVIEW OF UNITED STATES PATENT NO. 10,671,212 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

Hotelling further provides to the Combination, a teaching of *outputting* “tactile feedback” (*feedback that is perceptible by touch*) with a haptics mechanism to “alert a user that a user input has been made.” EX1004, [0163]; *see also* [0160–0161], [0173]; *supra*, Element [1.pre] (mapping Hotelling’s “haptics mechanism” to the claimed *actuator*). Specifically, Hotelling explains that “tactile...feedback can be used in conjunction with an input event including touch events”—e.g., short and long (*second*) *duration* touches on “a virtual button.” *Id.* Thus, a POSITA would have understood Hotelling to teach the claimed feature of *when a second duration of the touch being applied to the touch screen is detected in connection with the indicia, output feedback that is perceptible by touch, utilizing the actuator.* EX1003, ¶125.

[0163] Audio and/or tactile feedback may be used to alert a user that a user input has been made. For example, in response to touching a virtual button on the GUI, the haptics may provide force feedback in the form of vibration and the speaker may provide audio feedback in the form of a click. The tactile audio feedback can be used in conjunction with an input event including touch events, motion events, squeeze events. The feedback may provide information so that the user knows that they actually implemented an input (simulates the audio and tactile feel of a button or switch).

[0149] Duration is defined as the amount of time the finger stays at any one point. Duration may be variable or it may include states such as short and long. The touch location may be a random point or a specific location such as an onscreen button.

1st Duration Scenario [1.c] – Hotelling Teaches and Renders Obvious

Rebuttal to:

“[T]he one section that discusses ‘short’ and ‘long’ duration touches contains no reference to ‘input events’ or ‘touch events’ that would explain how this disclosure connects to the haptic feedback section of Hotelling in the way Petitioner claims.” Sur-Reply at 4.

Pet. 26-29
Reply 2-8

Patent Owner’s Narrow View of Hotelling Disregards the POSITA’s Extensive Knowledge Regarding Tactile Feedback—a Decades-Old Technology

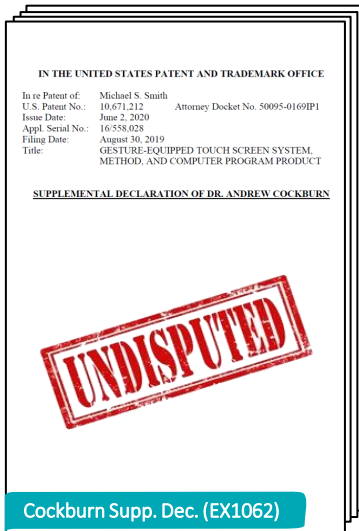
19. A POSITA would not have the narrow view of Hotelling’s disclosure that Dr. Madisetti presents, especially not at the time of the ’212 patent’s earliest claimed priority date in 2011. By that time, as explained in my Prior Declaration, the concept of using tactile feedback in response to user input commands on a touch screen had been known for decades and was already a deeply explored subject in the specific context of touch screen mobile devices. See EX1003, ¶¶46–48.

Therefore, we can classify all tactile feedback during touch screen interaction into five generic types: tactile feedback provided when the user starts, a gesture by touching a GUI element (T1), when the user then either drags (T2) or holds (T3) her pen/finger, and, finally, when the user lifts it off either inside (T4) or outside (T5) the GUI widget.

EX1060, p.3.

EX1062 (Cockburn Supp. Dec.) Para 19; cited at, e.g., Reply 4

EX1062 (Cockburn Supp. Dec.) Para 22



1st Duration Scenario [1.c] – Hotelling Teaches and Renders Obvious

Rebuttal
to:

“The Petition’s Proposed Combination Does Not Disclose or Suggest Providing Haptic Feedback Upon Detection of a Long Touch.” Sur-Reply at 3-5.

Pet. 26-29
Reply 2-8

Patent Owner Concedes Hotelling Teaches Tactile Feedback at Release, Which Applies to a “Long” Touch

PETITIONER’S REPLY TO PATENT OWNER’S RESPONSE

In any event, setting aside that it stems from a fundamental misreading of Hotelling, Patent Owner’s view that tactile feedback would occur “upon release” of a virtual button is a sufficient concession to settle the dispute. POR, 28–29. After all, the claims do not recite that the feedback occurs “during an ongoing hold,” (POR, 29 (emphasis altered)), merely *when a second duration of the touch is detected*. There is no reason why the end of a long touch—“upon release”—cannot be the claimed *second duration*. Patent Owner’s contrary position seemingly stems from its now-debunked construction that the claims require a “multi-part gesture.” POR, 26; *see supra* §I.

PATENT OWNER RESPONSE

Thus, a POSITA would have understood Hotelling to disclose “outputting tactile feedback” with a haptics mechanism in order to *mimic physical buttons* by providing haptic feedback upon the initial press and/or upon release—not when a

POR 29-30

PATENT OWNER SUR-REPLY

proposed. *Id.* PO does not propose any construction beyond confirming all conditional limitations must be met. POR, 13-17. *Id.* Petitioner’s confirmation that

Sur-Reply 3

1st Duration Scenario [1.c] – Hotelling Teaches and Renders Obvious

Pet. 26-29
Reply 2-8

A POSITA Would Have Been Motivated to Implement Tactile Feedback Responsive to a “Long” Touch Event

PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT NO. 10,671,212 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

touch. EX1004, [0163], [0149-0150], Figure 26, 27A-27B; EX1003, ¶126. Second, even setting aside Hotelling’s express suggestion, the POSITA would have known that tactile feedback was a well-known solution to the longstanding problem in mobile device computing of signaling significant events and/or prompting user interaction. EX1003, ¶127; *see also* ¶¶45-48 (discussing, with corroborating solution. *Id.*, ¶¶128-130. As discussed, one of the significant events in Hotelling occurs when the user’s “long” touch triggers a context-specific menu. EX1004, [0151], Figures 27A-27B. The POSITA, appreciating that the user should be notified of this event and given a cue to interact with the menu, would have been motivated to use the widespread solution of tactile feedback. EX1003, ¶130.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

providing this kind of feedback is to prevent user confusion. If the device takes an action or switches modes absent feedback, the user may lose track of what is going on, which contradicts well-known principles of user interface design. *See* EX1054, p.1 (“The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.”). As discussed, “[w]ithout tactile feedback, the user can only rely on audio and visual senses, which have many disadvantages.” EX1060, p.1.

EX1062 (Cockburn Supp. Dec.) Para 34

Cockburn Supp. Dec. (EX1062)

Second Duration Scenario

The Combined Teachings of Hotelling and Martyn Show
Calling a Contextual Menu With a Long Duration Touch
Was Obvious (Elements [1.d], [16.i], [84.e])

2nd Duration Scenario [1.d] – Hotelling-Martyn Renders Obvious

Pet. 11-17, 29-31
Reply 8-12

Martyn Teaches Invoking the App Snapshot Menu by a Long User Input— “Press and Hold”

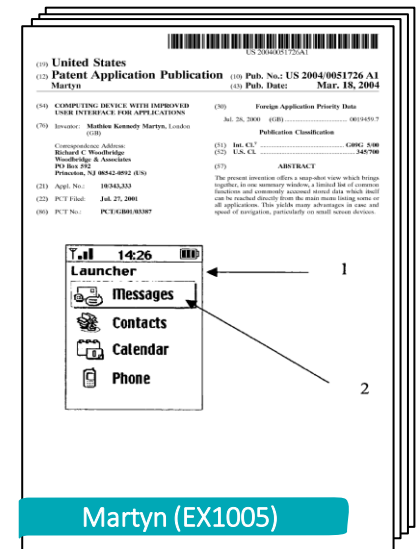
[0015] The present invention offers, in one implementation, a snap-shot view which brings together, in one summary window, a limited list of common functions and commonly accessed stored data which itself can be reached directly from the main menu listing some or all applications. This yields many advantages in ease and speed of navigation, particularly on small screen devices. For example, a user can get to the summary window in just two steps—first, launch a main view which shows various applications; then, launch the appropriate summary window for the application of interest. This is far faster and easier than conventional navigation approaches. Once the summary window is launched, core data/functionality is displayed and can be accessed in more detail can typically be reached simply by selecting that data/functionality. Hence, only three steps may be needed from start up to reaching the required data/functionality; navigating from between each step is clear and straightforward.

access the App Snapshot. For example, the App Snapshot may be ‘called’ or ‘fired’ by using a right scroll function (if the mobile telephone has 4-way scrolling capacity); a press and hold of the select function when an application name is highlighted; or using a right cursor key on a highlighted application name.

EX1006 [0017]



Figure 2



EX1006 [0015]

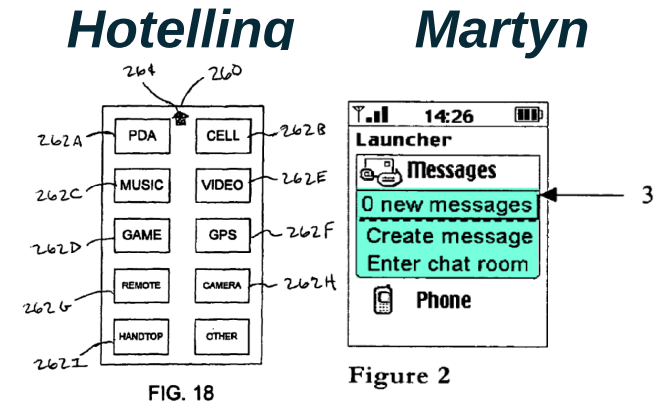
2nd Duration Scenario [1.d] – Hotelling-Martyn Renders Obvious

Pet. 11-17, 29-31; Reply 8-12

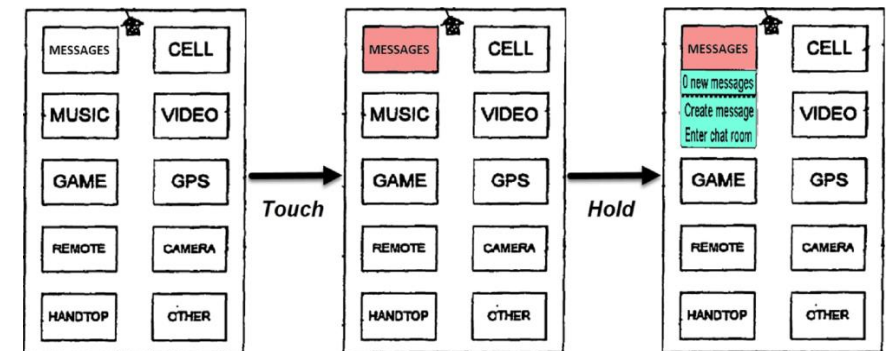
Combination: Hotelling's Main Menu GUI With Martyn's App Snapshot, Invoked by a "Long" Touch Hotelling Uses for a Similar Purpose

PETITION FOR INTER PARTES REVIEW OF UNITED STATES PATENT NO. 10,671,212 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

A POSITA would have been motivated to supplement Hotelling's teaching of a touch screen mobile device that provides a main page GUI of application icons with Martyn's complementary teaching to provide a contextual shortcut menu in response to a press-and-hold input on an application icon. EX1003, ¶75. The predictable result of this Hotelling-Martyn Combination is a mobile device that displays a contextual menu, such as Martyn discloses, in response to a "long" touch gesture applied by the user to one of the icons on Hotelling's main page GUI. *Id.*



The Hotelling-Martyn



Pet. 12

2nd Duration Scenario [1.d] – Hotelling-Martyn Renders Obvious

Rebuttal
to:

“Absent an articulated reason to combine these disparate disclosures in the face of contextual differences between each disclosure, the Petition’s motivation can only be impermissible hindsight.” Sur-Reply at 11.

Pet. 11-17, 29-31; Reply 8-12

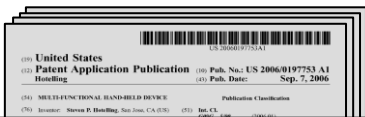
Hotelling’s Long Touch Suggestion Provides a Motivation to Combine

PETITION FOR INTER PARTES REVIEW OF UNITED STATES PATENT NO. 10,671,212 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

Third, a POSITA would have been prompted to pursue a combination with Martyn based on Hotelling’s suggestions to do so. EX1003, ¶¶83-84. For example, Hotelling teaches the notion of displaying a “context sensitive menu pop-up” in response to a “long” touch by the user. EX1004, [0151], Figures 27A-27B; see also [0093]. This disclosure by Hotelling would have prompted a POSITA to seek out and apply the teachings from references in the same field, like Martyn, that provide implementation details on contextual menus launched in response to a “long” user input (e.g., Martyn’s press-and-hold). EX1003, ¶83. Indeed, Martyn offers

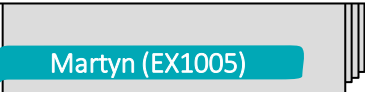
EX1006 [0017]

access the App Snapshot. For example, the App Snapshot may be ‘called’ or ‘fired’ by using a right scroll function (if the mobile telephone has 4-way scrolling capacity); a press and hold of the select function when an application name is highlighted; or using a right cursor key on a highlighted application name.



EX1004 Figure 27A

Duration	Touchdown location (virtual button?)	Proposed Behavior	Feedback
LONG	virtual button	On touch-down, do nothing. On click-down highlight item under touch (if any). After delay, bring-up context sensitive menu.	Context sensitive menu pop-up



Martyn (EX1005)

Pet. 16

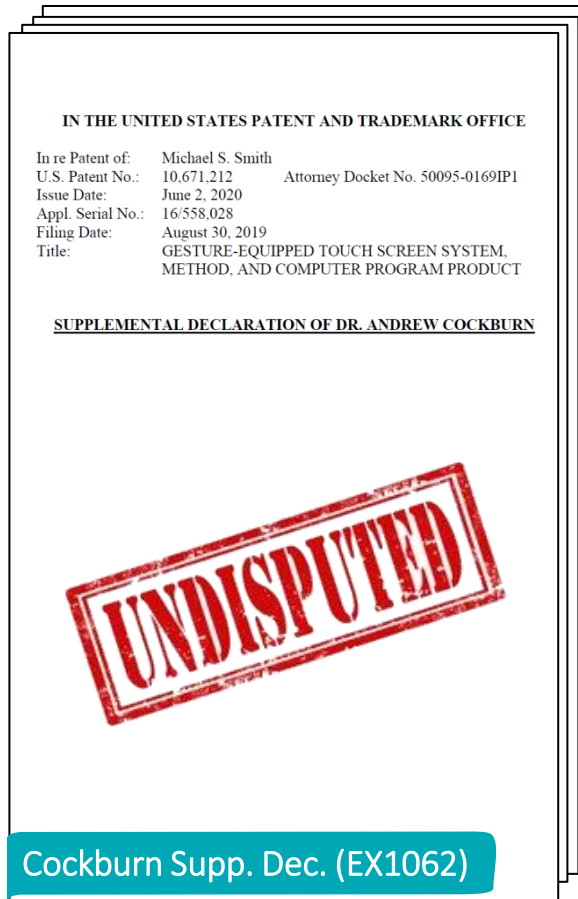
2nd Duration Scenario [1.d] – Hotelling-Martyn Renders Obvious

Rebuttal
to:

“Absent an articulated reason to combine these disparate disclosures in the face of contextual differences between each disclosure, the Petition’s motivation can only be impermissible hindsight.” Sur-Reply at 11.

Pet. 11-17, 29-31; Reply 8-12

Hotelling’s Long Touch Suggestion Provides a Motivation to Combine



EX1054, p.1. Given the prevalent use of long-duration touch gestures to invoke menus and control elements (see above) and Hotelling’s consistent use of this approach, it would not have made sense for the POSITA to deviate from such a convention. Accordingly, the fact that Hotelling discloses a “long” touch gesture on a virtual button in the Figure 27 music player GUI for calling a contextual menu would have prompted the POSITA to use the same gesture for the similar function of invoking Martyn’s App Snapshot in the Figure 18 main page GUI, which likewise includes virtual buttons.

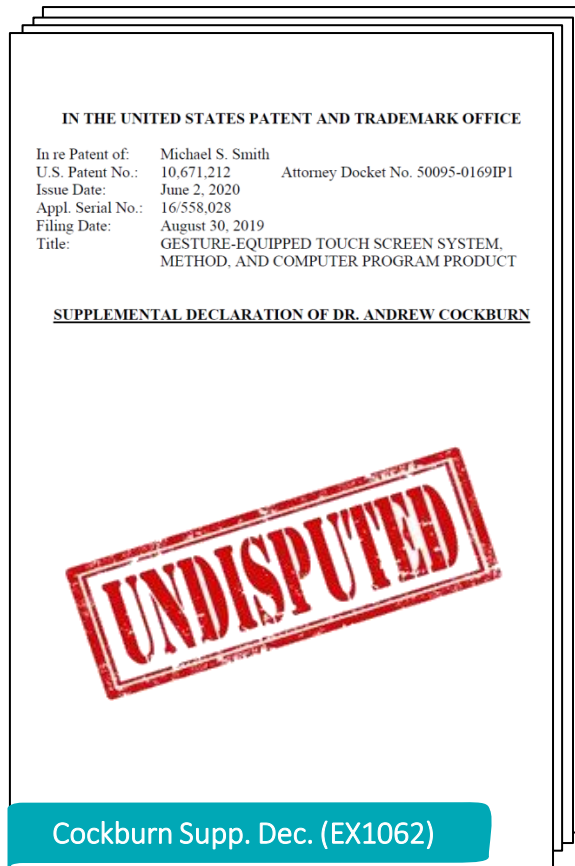
EX1062 (Cockburn Supp. Dec.) Para 46

2nd Duration Scenario [1.d] – Hotelling-Martyn Renders Obvious

Rebuttal to: “*The Reply’s Argument that Martyn is Directed to Touch Screen Devices is Both New and Incorrect.*” Sur-Reply at 13.

Pet. 11-17, 29-31
Reply 8-12

Touch Screen or Not, a POSITA Would Have Recognized Martyn’s Press-and-Hold as the Analog of Hotelling’s Long Touch



44. Additionally, even if Martyn were limited to a press-and-hold input applied to a physical button or a virtual representation of a physical button (which I merely assume as a hypothetical), that would not change the fact that a “long” touch gesture on a virtual button/application icon is an obvious analog that a POSITA would have been motivated to employ when integrating the App Snapshot into Hotelling’s main page GUI. As one example, I note that the online Android Developer’s guide in 2011 described an event listener called “onLongClick()” that applied equally to long duration inputs based on touch and physical key presses.

`onLongClick()`

From [View.OnLongClickListener](#). This is called when the user either touches and holds the item (when in touch mode), or focuses upon the item with the navigation-keys or trackball and presses and holds the suitable “enter” key or presses and holds down on the trackball (for one second).

EX1061, p.1.

Second Menu Interaction

The Hotelling-Martyn-Cho Combination Renders Obvious the Claimed Features of Using Slide/Swipe Gestures to Change the Menu in Five Different Ways (Elements [1.f], [16.k], [84.g])

2nd Menu Interaction [1.f] – Cho’s Teachings Render Obvious

Pet. 11-12, 17-20, 33-40
Reply 13-21

Five Independent Mappings Show Menu Display Changes Via a Slide or Swipe

- A. First Way: Highlighting Menu Items, Per Hotelling-Martyn 13
- B. Second Way: Dismissing the Menu, Per Hotelling-Martyn 15
- C. Third Way: Scrolling the Menu, Per Hotelling-Martyn-Cho 16
- D. Fourth Way: Resizing the Menu, Per Hotelling-Martyn-Cho 18
- E. Fifth Way: Dismissing the Menu, Per Hotelling-Martyn-Cho 20

Reply ii-iii

2nd Menu Interaction [1.f] – Cho’s Teachings Render Obvious

Cho Teaches Drag or Flick to Scroll a Window (Menu)

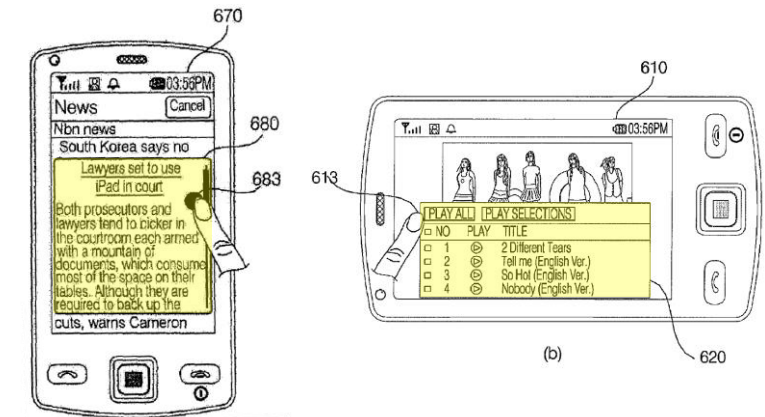
PETITION FOR INTER PARTES REVIEW OF UNITED STATES PATENT NO. 10,671,212 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

Cho further explains that the *detection* of a *slide/swipe gesture* can trigger at least three different *changes to at least one aspect of the display of the* information window (*menu*)—namely, via scrolling, re-sizing, and dismissing actions. EX1003, ¶¶147-150. First, Cho teaches that “[t]he contents of the information window 620 may be scrolled...in response to a flick [(*swipe*)] on the information window,” thus *changing* the appearance (*aspect*) of the menu display. EX1006, [0127]; see also [0079] (describing a touch-and-flick (*swipe*) or touch-and-drag (*slide*) to invoke “scroll command”), [0091], [0108], [0132]; EX1003, ¶148.

Pet. 11-12, 17-20, 33-40; Reply 13-21

[0127] The contents of the information window 620 may be scrolled independently in response to a flick on the information window 620. If a hyperlink object, if any, in the information window is selected, information relevant to the hyperlink object may be displayed.

EX1006 (Cho) [0127], Figure 17(b) [left]



[0132] Thereafter, if a short or long touch on the predefined news article 673 is detected, an information window 680 relevant to the predefined news article 673 may be displayed, as shown in FIG. 19(c). The size of the information window 680 may be configured to be adjusted in response to, for example, a touch-and-drag on one of the boundaries of the information window 650. The contents of the information window 680 may be configured to be scrolled independently in response to a scroll command 683 detected inside the information window 680.

EX1006 (Cho) [0132], Figure 19(c) [right]

EX1006 (Cho) [0132], Figure 19(c) [right]

2nd Menu Interaction [1.f] – Cho’s Teachings Render Obvious

**Rebuttal
to:**

“Instead, the Reply accuses the POR of being ‘shortsighted’ because it only addresses the examples disclosed in Martyn, and not those imagined by the Petitioner based on other references not cited in Martyn or the relevant section of the Petition. Compare Reply, 16-17 (citing EX1022) with Pet., 38.” Sur-Reply at 18.

Pet. 11-12, 17-20, 33-40
Reply 13-21

The Motivation Discussion in the Petition Explains That Cho’s Drag or Flick to Scroll Technique Was Known and Beneficial

PETITION FOR INTER PARTES REVIEW OF UNITED STATES PATENT NO. 10,671,212 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

Second, Cho’s use of slide/swipe gestures to interact with a contextual menu in an information window was a known technique, and applying it in the similar setting of the Hotelling-Martyn contextual menu window to obtain a substantially similar result would have been obvious as a matter of law under KSR. EX1003, ¶¶89-90; see also ¶¶91, 94-97 (explaining, with corroborating evidence, that movement gestures like slides/swipes were well known and employed in commercial touch screen products for interfacing with windowed contextual menus), ¶92 (explaining that a POSITA would have expected Cho’s teachings to apply similarly in Hotelling given the similarities between their touch screen mobile devices).

Fourth, Cho’s use of slide/swipe gestures as commands for basic functions like scrolling would have been seen as particularly advantageous from the POSITA’s perspective. EX1003, ¶94. For example, these types of motion-based gestures were already used in this manner across various commercially available touch screen mobile devices. *Id.*, ¶¶91, 94-97. Provisioning a known gesture to trigger a known function would have made the Hotelling-Martyn-Cho device easy and intuitive to use for consumers with prior experience operating older mobile devices. *Id.*, ¶98.

Pet. 18-20

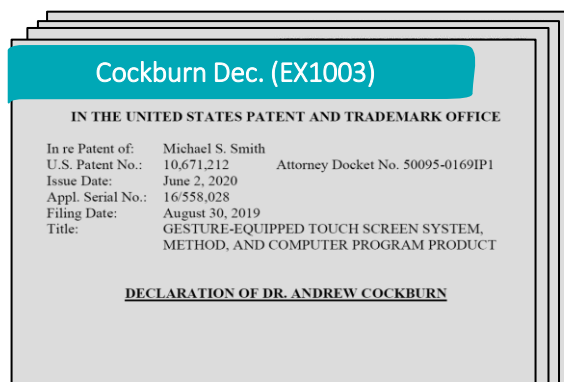
2nd Menu Interaction [1.f] – Cho’s Teachings Render Obvious

Rebuttal
to:

“Instead, the Reply accuses the POR of being ‘shortsighted’ because it only addresses the examples disclosed in Martyn, and not those imagined by the Petitioner based on other references not cited in Martyn or the relevant section of the Petition. Compare Reply, 16-17 (citing EX1022) with Pet., 38.” Sur-Reply at 18.

Pet. 11-12, 17-20, 33-40
Reply 13-21

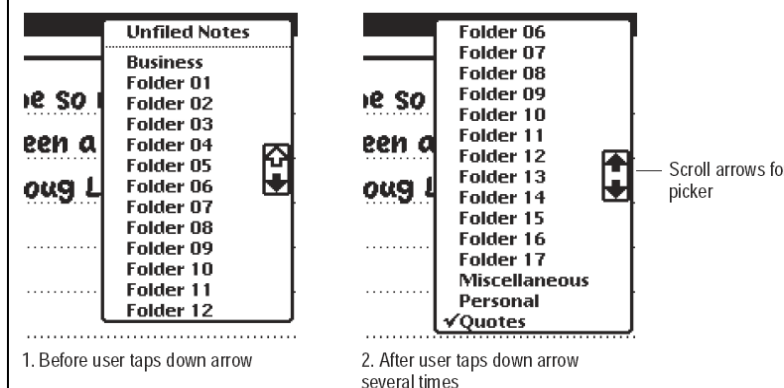
The Motivation Discussion in the Petition Explains That Cho’s Drag or Flick to Scroll Technique Was Known and Beneficial



91. Cho’s teachings in this regard were widely known by 2011 and had even matured to the point of commercial adoption. For example, the graphical user interface for Apple’s Newton, the touch screen PDA I discussed above in Section VI.B, featured a windowed menu called a “list picker” containing selectable “commands” that could be manipulated by the user (e.g., to highlight, scroll, and dismiss the list picker) using sliding/dragging gestures. EX1022, p. 127 (“A picker

Cited, e.g., at Pet. 18-19

Figure 4-9 List pickers that are too long to display all at once have scroll arrows



As usual, the color of the scroll arrow indicates whether tapping it will bring more items into view. An arrow is black if tapping it will bring more items into view. An arrow is white if tapping it will not bring more items into view.

Users can also scroll list pickers by dragging from the middle of the picker past the top or bottom of the picker. Users cannot scroll a list picker with the universal scroll arrows. Tapping a universal scroll arrow or anywhere else outside a list picker makes the picker go away.

EX1022 at 138

27