

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION and MICROSOFT MOBILE, INC.,
Petitioner,

v.

GLOBAL TOUCH SOLUTIONS, LLC,
Patent Owner.

Case IPR2015-01149
Patent 7,329,970 B2

Before JUSTIN BUSCH, LYNNE E. PETTIGREW, and BETH Z. SHAW,
Administrative Patent Judges.

PETTIGREW, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

In this *inter partes* review, instituted pursuant to 35 U.S.C. § 314, Microsoft Corporation and Microsoft Mobile, Inc. (collectively, “Petitioner”) challenge the patentability of claims 1, 3–5, 10–14, 19, 48, 49,

51, and 52 (“the challenged claims”) of U.S. Patent No. 7,329,970 B2 (Ex. 1001, “the ’970 patent”), owned by Global Touch Solutions, LLC (“Patent Owner”). We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 1, 3–5, 10–14, 19, 48, 49, 51, and 52 of the ’970 patent are unpatentable.

A. Procedural History

Petitioner filed a Petition for *inter partes* review of the challenged claims of the ’970 patent. Paper 1 (“Pet.”). Patent Owner did not file a Preliminary Response. On November 17, 2015, we instituted an *inter partes* review of the challenged claims of the ’970 patent on the sole ground of unpatentability asserted by Petitioner—obviousness over the combination of Jahagirdar¹ and Schultz.² Paper 12 (“Institution Decision” or “Dec.”). After institution, Patent Owner filed a Patent Owner Response, Paper 17 (“PO Resp.”), and Petitioner filed a Reply to the Patent Owner Response, Paper 20 (“Pet. Reply”). A consolidated hearing for this case and several others was held on August 4, 2016. A transcript of the hearing has been entered into the record. Paper 42 (“Tr.”).

B. Related Matters

Petitioner identifies the following district court proceedings that may be affected by a decision in this proceeding: *Global Touch Solutions, LLC v. Microsoft Corp.*, No. 3:15cv2750-JD (N.D. Cal.); *Global Touch Solutions,*

¹ U.S. Patent No. 6,125,286, issued Sept. 26, 2000 (Ex. 1004, “Jahagirdar”).

² U.S. Patent No. 4,053,789, issued Oct. 11, 1977 (Ex. 1005, “Schultz”).

LLC v. VIZIO, Inc., No. 3:15cv2747-JD (N.D. Cal.); *Global Touch Solutions, LLC v. Apple Inc.*, No. 3:15cv2748-JD (N.D. Cal.); *Global Touch Solutions, LLC v. Motorola Mobility LLC*, No. 3:15cv2749-JD (N.D. Cal.). Paper 7, 3. Petitioner also filed petitions for *inter partes* review of related U.S. Patent Nos. 7,994,726 B2 (IPR2015-01147), 7,498,749 B2 (IPR2015-01148), 7,781,980 B2 (IPR2015-01150), and 8,288,952 B2 (IPR2015-01151). *See* Pet. 4. Trials were instituted in those proceedings as well. The parties also identify as a related matter IPR2015-01173, which is a petition for *inter partes* review of the '970 patent filed by a different petitioner. *Id.* at 4–5; Paper 4, 2.

C. The '970 Patent

The '970 patent is directed to portable electronic devices that operate on exhaustible power sources such as batteries. Ex. 1001, Abstract. The '970 patent describes using a microchip-controlled switch that manages both current-conducting and user-interface functions in an electronic device such as a flashlight without the switch itself conducting current to the load. *Id.* at 3:41–46. A visible indicator such as a light emitting diode (LED) can be used to indicate the condition of the battery. *Id.* at 9:47–55, Fig. 11.

D. Illustrative Claim

Among the challenged claims, only claims 1 and 52 are independent. Claim 1 is illustrative and reads:

1. An electronic module for use with a product comprising an energy consuming load and a power source or a connection to a power source, said module comprising a microchip, and a switch;

said switch being a user interface and does not form a serial link in a circuit that transfers power from the power source to power the load, and said microchip controlling a

luminous visible location indicator that is not the load according to at least one configuration selected from the following group:

a) wherein the visible indicator at least indicates a condition of the product upon receiving a signal from the user interface switch, and wherein the switch is a touch sensor type switch;

b) wherein the visible indicator is activated at least to indicate an activation signal from the switch when the load is not activated; and

c) wherein the visible indicator is also used to indicate a power level of the power source when the load is switched off and the product is not connected to a mains supply.

Id. at 13:60–14:13.

II. DISCUSSION

A. Claim Construction

In an *inter partes* review, we construe claim terms in an unexpired patent according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144 (2016) (holding that 37 C.F.R. § 42.100(b) “represents a reasonable exercise of the rulemaking authority that Congress delegated to the Patent Office”). Consistent with the broadest reasonable construction, claim terms are presumed to have their ordinary and customary meaning as understood by a person of ordinary skill in the art in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An inventor may provide a meaning for a term that is different from its ordinary meaning by defining the term in the specification with

reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

In the Institution Decision, we adopted Petitioner’s proposed construction of “not connected to a mains supply,” recited in claim 1, as “not connected to the AC utility wiring system of a building.” Dec. 5. Patent Owner does not challenge that construction. After considering the complete record, we maintain this construction of “not connected to a mains supply” for this Final Written Decision. To the extent it is necessary for us to construe any additional claim terms in this decision, we do so below in the context of analyzing whether the prior art renders the claims unpatentable.

B. Obviousness over Jahagirdar and Schultz

Petitioner contends that claims 1, 3–5, 10–14, 19, 48, 49, 51, and 52 are unpatentable under 35 U.S.C. § 103(a) as obvious over Jahagirdar and Schultz. Pet. 25–59. Relying in part on the testimony of Dr. Mark N. Horenstein, Petitioner explains how the combination of Jahagirdar and Schultz allegedly teaches all of the claim limitations and contends a person having ordinary skill in the art would have been motivated to combine the teachings of the references. *Id.* (citing Ex. 1012).

We have reviewed the Petition, Patent Owner Response, and Petitioner’s Reply, as well as the relevant evidence discussed therein. For the reasons that follow, we determine Petitioner has shown by a preponderance of the evidence that the challenged claims would have been obvious in view of the combination of Jahagirdar and Schultz.

1. Jahagirdar

Jahagirdar describes a mobile phone that has a microchip-controlled user interface and mechanical push-button switches. Ex. 1004, 3:59–67; Ex. 1012 ¶ 31. Figure 4 of Jahagirdar is reproduced below.

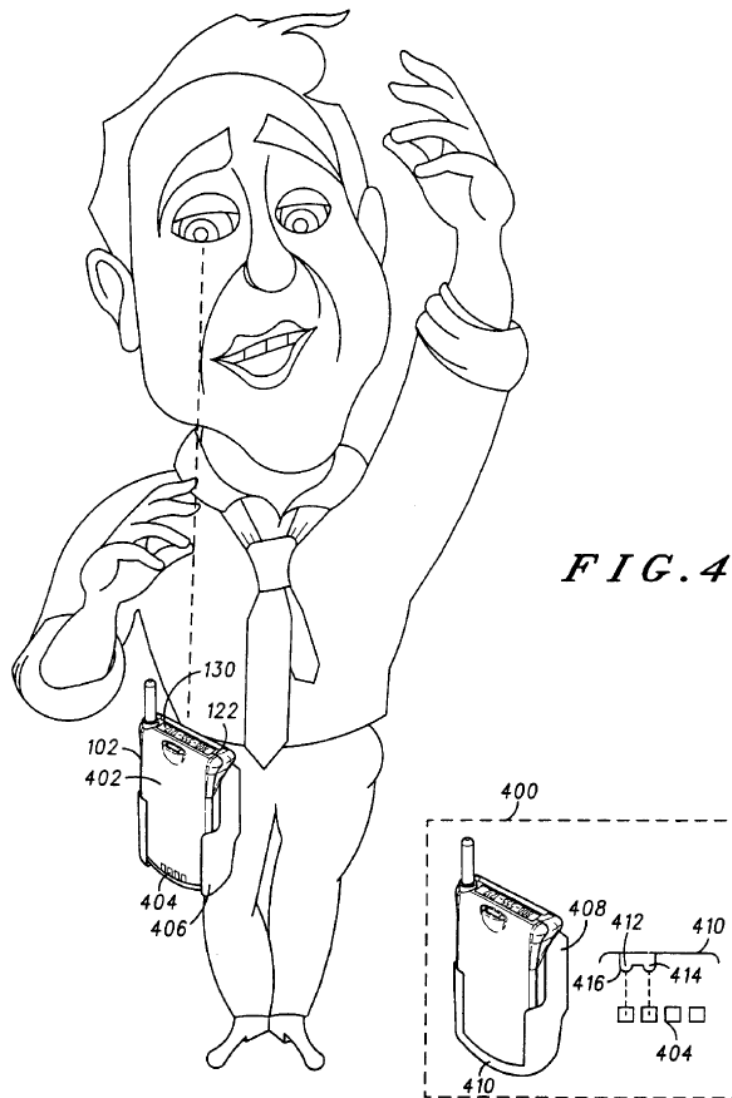
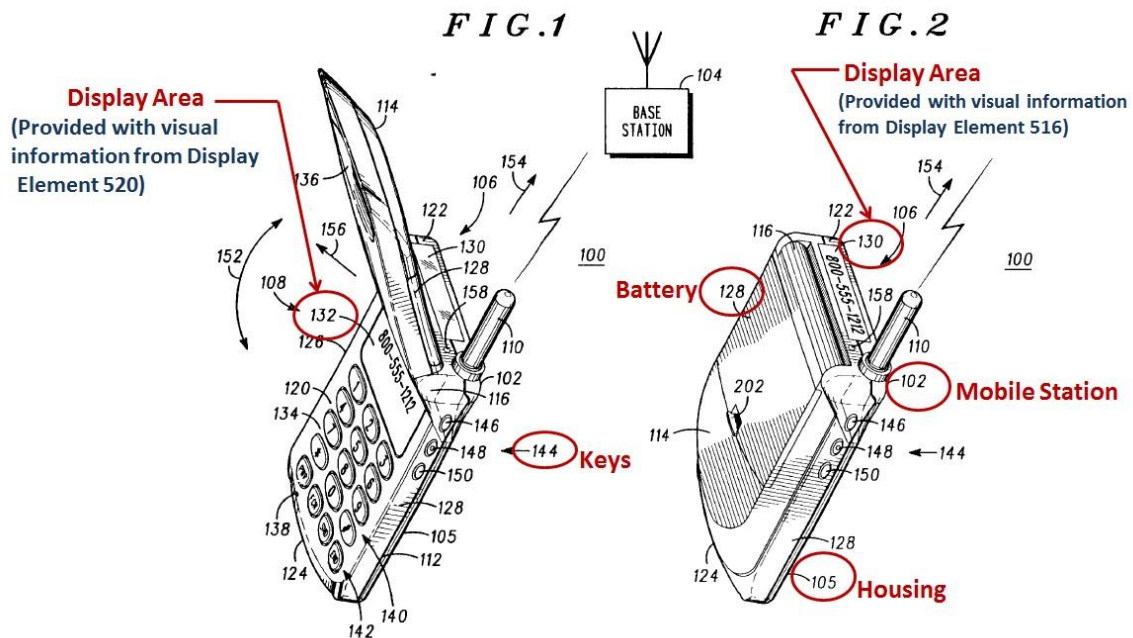
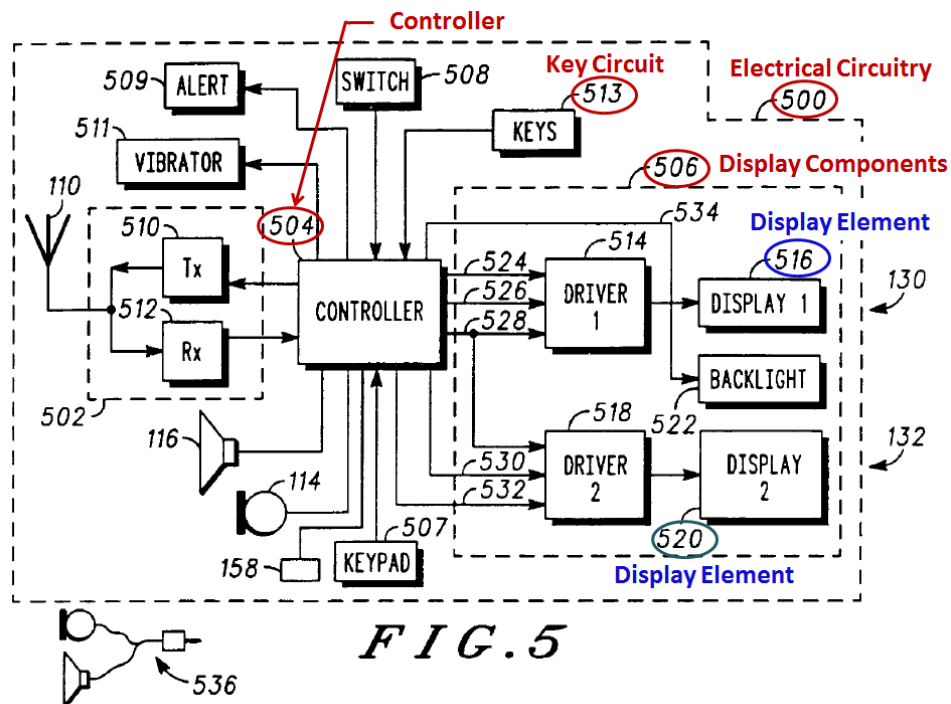


Figure 4 is an illustration of a mobile station being worn in a holster by a user. Figures 1 and 2 of Jahagirdar (with Petitioner's annotations) are reproduced below:



Pet. 27. Figures 1 and 2 are illustrations of mobile station 102 having removable battery 128, first display area 130, and second display area 132. Ex. 1004, 1:38–40, 3:33, 4:28–29. Figure 5 of Jahagirdar (with Petitioner’s annotations) is reproduced below:



Pet. 26. Figure 5 is a schematic block diagram of electrical circuitry 500 of mobile station 102. Ex. 1004, 1:46–47. Display elements 516 and 520 provide visual information in display areas 130 and 132, respectively, shown in Figures 1 and 2. *Id.* at 4:40–42.

2. Schultz

Schultz describes “a reliable touch actuated system . . . responsive to the touch of an animal . . . [such as] human beings, pets and domestic animals.” Ex. 1005, 1:27–31. Schultz discloses touch responsive area 67. *Id.* at 4:47–48; Ex. 1012 ¶ 40.

3. Claim 1

Petitioner asserts that the combination of Jahagirdar and Schultz teaches all of the limitations of independent claim 1. Pet. 25–40. Beginning with the preamble, Petitioner contends that Jahagirdar describes the recited “electronic module” (electrical circuitry 500 shown in Figure 5) “for use with a product” (mobile station 102 shown in Figures 1 and 2). *Id.* at 26 (citing Ex. 1004, 3:59–60; Ex. 1012 ¶ 53). Petitioner also contends that Jahagirdar describes an “energy consuming load” (display element 520, which provides visual information for display area 132) and a “power source” (battery 128). *Id.* at 26–27 (citing Ex. 1004, 3:33, 4:40–41; Ex. 1012 ¶ 53). Further, Petitioner contends that Jahagirdar describes the recited “microchip” (controller 504 in Figure 5) and “switch” (any of keys 144). *Id.* at 27 (citing Ex. 1004, 3:60–62, 4:19–20).

Turning to the body of claim 1, Petitioner contends that Jahagirdar’s switch (i.e., any of keys 144) is a “user interface” because “key circuit 513 provides signals to controller [504] in response to actuations of the plurality of keys 144.” *Id.* at 28 (quoting Ex. 1004, 4:19–20). Moreover, Petitioner

points out that Jahagirdar's switch (keys 144) "does not form a serial link in a circuit that transfers power from the power source to power the load" because "Figure 5 show[s] that keys 144 and key circuit 513 [are] separated from controller 504 and display element 520 such that 'controller 504 controls power to driver 518 and display element 520 through a line 530.'" *Id.* (quoting Ex. 1004, 4:33–34); *see* Ex. 1012 ¶ 57.

We agree with and adopt Petitioner's contentions regarding Jahagirdar's disclosure of these limitations as set forth in the Petition. *See id.* at 25–28. The remaining limitation of claim 1 is "said microchip controlling a luminous visible location indicator that is not the load according to at least one configuration selected from" a group of three specific configurations, labeled (a)–(c). Ex. 1001, 13:66–14:13. Petitioner contends that Jahagirdar teaches most of the claimed features, relying on Jahagirdar in combination with Schultz for the "touch sensor" in configuration (b). Pet. 28–40. Patent Owner challenges certain of Petitioner's contentions regarding this limitation. PO Resp. 4–26. Although configurations (a)–(c) are recited as alternatives, so that only one need be taught by the prior art to render the claim obvious, we address the parties' arguments with respect to all three because most of the challenged dependent claims specify that one of the configurations is selected or otherwise recite similar limitations.

a. "luminous visible location indicator"

Petitioner contends that Jahagirdar teaches "said microchip controlling a luminous visible location indicator that is not the load," as recited in claim 1. Pet. 29–30. Specifically, Petitioner asserts that display element 516, which may be an LED display and also may include

illuminating icons, illuminates when it displays information, and thus indicates the location of display element 516. *Id.* at 29 (citing Ex. 1004, 4:43–46; Ex. 1012 ¶ 60). Petitioner further argues that Jahagirdar’s microchip (controller 504) controls the luminous visible location indicator when, after detecting an actuation of key 150 (one of keys 144 in Jahagirdar’s user interface), it sends display data to driver 514, which sends the data to display element 516 for display of new visual information in display area 130. *Id.* at 30 (citing Ex. 1004, 5:54–57, Fig. 8A; Ex. 1012 ¶ 61). Finally, Petitioner distinguishes Jahagirdar’s luminous visible indicator (display element 516) from the load (display element 520). *Id.* (citing Ex. 1004, Fig. 5; Ex. 1012 ¶ 62).

Patent Owner contends that Jahagirdar’s display element 516 is not a “luminous visible *location* indicator.” PO Resp. 5–13. First, Patent Owner argues that for display element 516 to be visible and illuminated, the location of the mobile phone must be known by the user physically touching the phone. PO Resp. 2, 7. According to Patent Owner, a location can be indicated only if the location is at least partially unknown, and therefore display element 516 cannot indicate location while the user is touching or holding the phone. *Id.* Patent Owner also argues that even if the LED display remains illuminated for a period of time after it has been activated, it is not a location indicator because, by the time the user has forgotten the location of the phone (so that the phone can be “located” again), the LED will have turned off due to expiration of a timer. *Id.* at 9, 12.

We agree with Petitioner that display element 516, configured as an LED display, is a “luminous visible location indicator” as recited in claim 1. *See* Pet. 29–30; Pet. Reply 1–3. First, as Petitioner points out, Patent

Owner's expert, Dr. Morley, admits that Jahagirdar discloses an embodiment in which LED display 516 "is on all the time," and therefore would indicate the location of the phone "until the battery dies." Ex. 1017, 198:15–21; *see* Pet. Reply 2 (citing Ex. 1004, 8:1–4). Moreover, even in the embodiment in which LED display element 516 turns off after the expiration of a timer, Dr. Morley admits that the LED display would be a location indicator during the time that it remains illuminated. Ex. 1017, 198:22–199:11; *see* Pet. Reply 2; *see also* Ex. 1004, 5:64–65, Fig. 8A (timer for display element 516 set in step 818 and expired in step 826). Notably, the claim language does not place any limitation on how long the location indicator must function. Finally, to the extent Patent Owner argues that a visible indicator can indicate location only if the location is "unknown," Patent Owner identifies no support in the '970 patent for such an interpretation. *See* PO Resp. 7, 9; Pet. Reply 2–3. Thus, Jahagirdar's display element 516 satisfies the recited "luminous visible location indicator."

b. Configuration (a)

In configuration (a), "the visible indicator at least indicates a condition of the product upon receiving a signal from the user interface switch, and where the switch is a touch sensor type switch." Ex. 1001, 14:3–6. Petitioner asserts that Jahagirdar teaches a visible indicator that indicates a condition of the product upon receiving a signal from the user interface switch because, after detecting an actuation of key 150, controller 504 sends data to display element 516 (visible indicator) that results in the display of new visual information, which may include, for example, battery status information or communication status information. Pet. 30–31 (citing Ex. 1004, 5:54–64; Ex. 1012 ¶ 64). Although Jahagirdar

does not teach a switch that is “a touch sensor type switch,” as required in configuration (a), Petitioner submits that touch sensor switches were well known in the art at the time of the invention, as evidenced by Schultz’s disclosure of a touch sensor (touch responsive area 67). *Id.* at 31–32.

Petitioner argues that a person having ordinary skill in the art would have incorporated touch sensors into keys 144 of Jahagirdar so that a touch sensor formed part of the user interface. *Id.* at 31. Petitioner asserts that the combination of Schultz’s touch sensor with Jahagirdar’s mobile phone is merely the combination of known elements performing known functions and yielding predictable results. *Id.* at 36 (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007); Ex. 1012 ¶ 76). Petitioner points to various references and Dr. Horenstein’s testimony regarding an ordinarily skilled artisan’s knowledge and understanding of the prior art and ability to combine the respective teachings from that prior art. *Id.* at 33–37.

Specifically, Petitioner argues “[i]ncorporating a touch sensor into Jahagirdar would have asked little of a person of ordinary skill, because a touch sensor would have improved Jahagirdar in the same way a touch sensor would have improved any such electronic device.” *Id.* at 37 (citing Ex. 1012 ¶ 69). Petitioner further asserts claim 1 of the ’970 patent “does not specify the details of the claimed touch sensor” and “Schultz’s touch sensor could have been integrated into Jahagirdar’s keys 144 in multiple ways depending upon what might have been convenient or desirable.” *Id.* (citing Ex. 1012 ¶ 76). In particular, Petitioner contends Jahagirdar’s keys 144 could have been replaced by one or more touch sensors, such that the touch sensors would perform the functions that Jahagirdar’s keys 144 perform. *Id.*; see Ex. 1012 ¶ 76 (Dr. Horenstein testifying that, if a person

having ordinary skill in the art were to integrate Schultz's touch sensors into Jahagirdar's keys 144, it would have been within that person's technical grasp and knowledge of options to relocate keys 144 or program Jahagirdar's controller to recognize input to keys 144 when mobile station 102 was in either an open or closed position). Accordingly, Petitioner argues combining Schultz's touch sensor with Jahagirdar's mobile phone would have been obvious because "Jahagirdar and Schultz demonstrate that the elements of claim 1 were well known, and the combinations of the techniques described therein would have yielded no more than one would expect from such an arrangement." Pet. 36 (citing Ex. 1012 ¶ 76).

Patent Owner's expert, Dr. Morley, agrees with Petitioner's underlying assertions as to why the challenged claims would have been obvious: the flip-phone of Jahagirdar and touch sensor of Schultz are prior art; there was no technical barrier to combining the prior art elements; and the result of combining the prior art elements was predictable. Ex. 1017, 176:2–177:7; Ex. 2006 ¶ 41 (correctly stating that combining "prior art elements according to known methods to yield predictable results" is one exemplary rationale for obviousness). As Dr. Morley explains, the Schultz touch sensors were not limited by size or arrangement, and a person of ordinary skill could have taken the Schultz sensors and put them into touch sensors the size of the buttons on Jahagirdar. Ex. 1017, 138:17–21, 140:2–13. Additionally, as Dr. Morley acknowledges, the claims of the '970 patent contain no limitations as to the physical form, internal architecture, or arrangement of the touch sensors. *Id.* at 172:12–173:10. Patent Owner presents no argument that the proposed combination would have been

beyond the capabilities or knowledge of a person having ordinary skill in the art. *See* PO Resp. 14–23.

As the Supreme Court has stated, “when a patent simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious.” *KSR*, 550 U.S. at 417 (internal quotation marks omitted). “If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.” *Id.* As illustrated by Schultz, the use of a touch sensor as an alternative to a mechanical push button was already well known in the prior art. *See* Ex. 1005; Ex. 1012 ¶¶ 40–43. We agree that the combination of Jahagirdar and Schultz teaches the limitations of claim 1 as arranged, and we are persuaded the proposed combination would have been obvious, because it merely involves substitution of familiar elements, the combination of which yields predictable results. *See KSR*, 550 U.S. at 417. In particular, we agree that the proposed combination is the simple substitution or modification of Jahagirdar’s keys with Schultz’s known touch sensor. This is, in other words, a textbook case of obviousness. *See Agrizap, Inc. v. Woodstream Corp.*, 520 F.3d 1337, 1344 (Fed. Cir. 2008) (“This is a textbook case of when the asserted claims involve a combination of familiar elements according to known methods that does no more than yield predictable results.”). Patent Owner does not point us to objective evidence of nonobviousness to overcome the textbook case of obviousness here.

Furthermore, Petitioner offers additional reasons an ordinarily skilled artisan would have modified or replaced Jahagirdar’s keys with Schultz’s touch sensor. In particular, Petitioner contends Schultz explicitly identified

certain advantages of its touch sensor, including minimizing accidental actuation and eliminating contamination and mechanical failures associated with switches having moving parts. Pet. 33 (citing Ex. 1012 ¶ 68); Ex. 1005, 1:9–24. Petitioner further contends an ordinarily skilled artisan would have incorporated Schultz’s touch sensor switches into Jahagirdar’s mobile phone “to enhance convenience and aesthetics for the user.” Pet. 33 (citing Ex. 1012 ¶ 68).

Patent Owner argues that the combination is based on hindsight and challenges Petitioner’s additional reasons for the combination. PO Resp. 15–21. Specifically, Patent Owner argues that replacing Jahagirdar’s keys 144 with Schultz’s touch sensor would actually increase accidental actuations because a user would contact the touch sensors while carrying or using the phone due to the location of touch sensors on the side of the phone. *Id.* at 16–20. Patent Owner also contends there is no evidence that Jahagirdar’s keys 144 are subject to contamination or mechanical failure and, to the extent they are, a person of ordinary skill in the art would have replaced keys 144 with switches other than touch sensors, such as membrane switches. *Id.* at 20–21 (citing Ex. 2006 ¶¶ 83–86; Ex. 1001, 8:4–10). Patent Owner further argues that the record does not provide an evidentiary basis to conclude that Jahagirdar’s mobile device would be improved aesthetically by incorporating Schultz’s touch sensor and that incorporating the touch sensor would decrease convenience due to increased accidental actuation. *Id.* at 20. Finally, Patent Owner argues the combination “is taught away from” because the art adopted a different solution—membrane switches. *Id.* at 22.

Notwithstanding Patent Owner's position that Petitioner's proposed combination would increase accidental actuations when grabbing or holding Jahagirdar's mobile station, Petitioner points to Dr. Morley's testimony that touch sensors would alleviate accidental actuation by *inanimate* objects (e.g., "clothes, objects in a bag, [and] surfaces of furniture"). Pet. Reply 5 (citing Ex. 1017, 157:20–158:23; Ex. 2006 ¶ 82). Accordingly, Petitioner argues a person having ordinary skill in the art looking to reduce inadvertent actuation by inanimate objects would be motivated to incorporate Schultz's touch sensor. *Id.* (citing Ex. 1020 ¶¶ 4–5 (Second Declaration of Dr. Horenstein)). Moreover, Petitioner's unrebutted evidence in the record demonstrates Schultz's touch sensor could have been integrated into Jahagirdar's keys 144 in multiple ways, depending upon what might have been convenient or desirable. See Pet. 37 (citing Ex. 1012 ¶ 76); Ex. 1020 ¶ 5. For example, a person of ordinary skill readily would have been able to relocate those touch sensors to different locations, or "one of skill could have easily programmed Jahagirdar's controller such that touch sensor inputs were only recognized at appropriate times . . . , depending on whether the mobile station 102 was opened or closed." Ex. 1012 ¶ 76. In such a way, inadvertent actuation of the touch sensors would be minimized or eliminated.

Even assuming that other switches, such as membrane switches, would have been available or preferable for reducing contamination and mechanical failures, Petitioner argues that would not render the proposed combination nonobvious. Pet. Reply at 8–10. Regarding the argument that a person having ordinary skill would look to add Schultz's touch sensor to Jahagirdar's keys 144 due to aesthetic concerns, Petitioner asserts Dr.

Morley admitted aesthetics might be a reason to design a product with touch sensors and has offered no reasons why some phone designers or users would ignore aesthetics. *Id.* at 6–7 (citing Ex. 1017, 171:24–172:3).

Petitioner also points to examples of products that integrated touch sensors into user interfaces. Pet. 35–36 (citing Exs. 1006, 1008, 1009); Pet. Reply 7.

We have reviewed the parties’ arguments and evidence and find that the preponderance of the evidence in the record supports a conclusion that it would have been obvious to combine Schultz’s touch sensor with the teachings of Jahagirdar to teach configuration (a) of the visible indicator, as recited in claim 1. Patent Owner’s primary argument against Petitioner’s additional reasons for its proposed combination is that touch sensors on Jahagirdar’s mobile phone would increase inadvertent actuations when grabbing or holding the modified mobile phone. *See, e.g.*, PO Resp. 3 (“inadvertent actuation . . . is in fact exacerbated by the proposed substitution”), 18 (“combination of art . . . would increase, not decrease, accidental or inadvertent actuation”). However, we find an ordinarily skilled artisan would have been capable of assessing any benefits and harms of integrating a touch sensor into Jahagirdar’s mobile phone and, using ordinary creativity, deciding whether to modify the arrangement of keys 144 or program the phone to recognize touch sensor inputs only in certain circumstances in order to minimize or eliminate inadvertent actuation. *See KSR*, 550 U.S. at 417 (“If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.”); *id.* at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”); Ex. 1012 ¶ 76. Moreover, we agree with Petitioner that one of ordinary skill in the art would have been motivated to pursue the desirable

properties of touch sensors, as taught by Schultz, even at the potential expense of forgoing a benefit of the push buttons taught by Jahagirdar. *See In re Urbanski*, 809 F.3d 1237, 1243 (Fed. Cir. 2016).

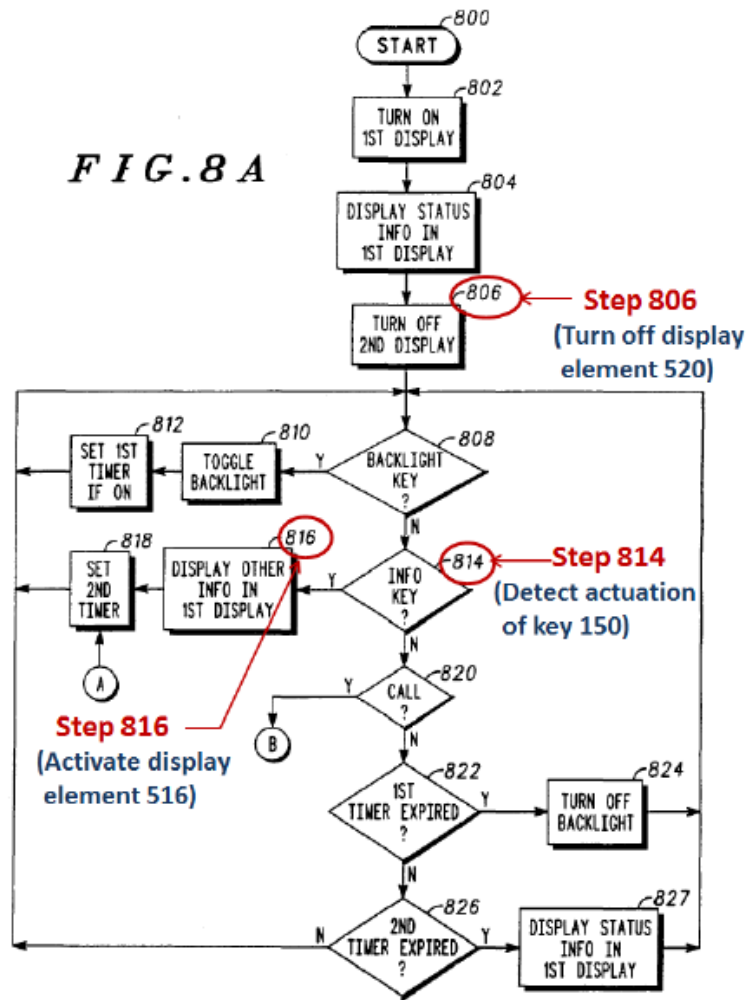
c. Configuration (b)

In configuration (b), “the visible indicator is activated at least to indicate an activation signal from the switch when the load is not activated.” Ex. 1001, 14:7–9. Petitioner asserts that Jahagirdar discloses its visible indicator (display element 516) “is activated at least to indicate an activation signal from the switch” when display element 516 displays information after the controller receives an activation signal from key 150. Pet. 38 (citing Ex. 1004, 5:54–57, Fig. 8A; Ex. 1012 ¶ 78). Petitioner also argues activation of Jahagirdar’s visible indicator (display element 516 providing visual information for display area 130) occurs “when the load is not activated” because Figure 8A, a flowchart showing operation of the mobile station, indicates that display element 520 (the claimed energy consuming load) is turned off (step 806) prior to key actuation (step 814) that sends data to display element 516 (step 816). *Id.* at 38–39 (citing Ex. 1004, 5:35–37; Ex. 1012 ¶ 79).

Patent Owner argues that Jahagirdar does not teach a visible indicator that is activated in response to an activation signal from the user interface switch because display element 516 is turned on when the phone is closed, not in response to a key actuation. PO Resp. 24. Further, Patent Owner argues that Jahagirdar does not teach a visible indicator that is activated while the load is not activated because display element 516 is turned on when the phone is closed in step 802 of Figure 8A, which occurs prior to the time when display element 520 (the load) is turned off in step 806. *Id.*

In reply, Petitioner asserts that Patent Owner's argument is based on the incorrect premise that the only way to activate Jahagirdar's visual indicator is "when the phone is closed—not in response to a user interface switch activation as called for by the [claims]." Pet. Reply 12 (quoting PO Resp. 24). According to Petitioner, Patent Owner ignores the configuration described in Jahagirdar in which display element 516 is not activated prior to actuation of key 150. *Id.* Specifically, Jahagirdar discloses that although display area 130 may display status information from display element 516 when the phone is flipped closed, "[a]lternatively, the status information may include little or no information, where display area 130 is cleared." Ex. 1004, 5:43–44; see Pet. Reply 12–13. When key 150 is pressed in this alternative configuration, display area 130 changes from a blank screen to displaying "new visual information" provided by display element 516. Ex. 1004, 5:43–57; Ex. 1020 ¶ 6.

We agree with Petitioner that Jahagirdar teaches this limitation of claim 1. Figure 8A of Jahagirdar (with Petitioner's annotations) is reproduced below:



Pet. 19. Figure 8A of Jahagirdar is a flowchart illustrating operation of the mobile phone. Ex. 1004, 1:53–54. In step 800, the phone is flipped closed, and in step 802, controller 504 enables power to display element 516. *Id.* at 5:27–30. In step 804, data is sent to display element 516 for displaying visual information, preferably status information, in display area 130. *Id.* at 5:32–35. In the alternative configuration cited by Petitioner, step 804 clears display area 130. *See id.* at 5:43–44. Then, in step 806, controller 504 disables power to display element 520 (the claimed load). *See id.* at 5:35–37. At this point, “the load is not activated,” as recited in claim 1.

When controller 504 later detects an actuation of key 150 in step 814, controller 504 sends display data to driver 514, which sends data to display element 516, which provides new visual information for display area 130 on the phone. *Id.* at 5:54–57. We agree with Petitioner that in the embodiment in which display area 130 is cleared in step 804, actuation of key 150 in step 814 is an “activation signal from the switch” that activates the visible indicator when display element 516 provides visual information to display area 130. *See* Pet. Reply 14 (citing Ex. 1020 ¶ 6). As Petitioner asserts, a screen changing from blank to displaying information meets any reasonable understanding of “activation.” *Id.* (citing Ex. 1020 ¶ 6); *see also* Tr. 114:7–8 (Patent Owner’s counsel responding that “activation would require both power to the display and display of information”). Thus, we agree with Petitioner that Jahagirdar teaches configuration (b) of claim 1, in which “the visible indicator is activated at least to indicate an activation signal from the switch when the load is not activated.”

d. Configuration (c)

In configuration (c), “the visible indicator is also used to indicate a power level of the power source when the load is switched off and the product is not connected to a mains supply.” Ex. 1001, 14:10–13.

Petitioner contends that Jahagirdar’s visible indicator is “used to indicate a power level of the power source when the load is switched off” because, in step 816 of Figure 8A, display element 516 (visible indicator) displays “new visual information” that may include “battery status information such as a battery level indication,” and this occurs after display element 520 (load) is turned off in step 806. Pet. 39–40 (citing Ex. 1004, 5:35–37). Petitioner also contends that Jahagirdar’s mobile station is “not

connected to a mains supply” because its power source is a removable battery. *Id.* at 40 (citing Ex. 1004, 3:33; Ex. 1012 ¶ 84). Patent Owner presents no arguments regarding this alternative configuration. We agree with and adopt Petitioner’s contentions with respect to configuration (c) in claim 1 as set forth in the Petition. *See* Pet. 39–40.

e. Summary

For the foregoing reasons, Petitioner has shown that the combination of Jahagirdar and Schultz teaches all the limitations of claim 1, including a “luminous visible location indicator” that is controlled by a microchip according to at least one of configurations (a)–(c) set forth in the claim. We also determine that Petitioner has articulated sufficient reasoning for combining Jahagirdar and Schultz. Accordingly, we conclude that Petitioner has shown by a preponderance of the evidence that claim 1 would have been obvious over the combination of Jahagirdar and Schultz.

4. Claims 3, 4, 10–14, 19, 48, 49, and 51

Patent Owner presents no additional arguments for claims 3, 4, 10–14, 19, 48, 49, and 51 beyond its arguments with respect to claim 1, from which they ultimately depend. The additional claims recite: (i) selection of configuration (b) or configuration (c) from claim 1 (claims 3, 19, and 48), (ii) a touch sensor (claims 3, 19, and 48), (iii) multiple switches or buttons (claim 4), (iv) electronic module components structurally integral with, enclosed in, or attached to the product housing (claims 10 and 49), (v) location indicator indicating a condition of the product (claim 11), (vi) a function selected by an activation signal that is automatically shut off after a period of time (claims 12 and 19); (vii) the product comprises radio frequency circuitry (claims 13 and 51), and (viii) the power source is a direct

current source (claim 14). Ex. 1001, 14:17–21, 14:38–49, 14:63–67, 16:20–25, 16:29–30. For the reasons discussed above, we agree with Petitioner that the combination of Jahagirdar and Schultz teaches the limitations in (i) and (ii). For the limitations in (iii)–(viii), we agree with and adopt Petitioner’s assertions as to how the combination of Jahagirdar and Schultz teaches them. See Pet. 42, 44–51. Also, as discussed above, we agree with Petitioner that an ordinarily skilled artisan would have combined Schultz’s touch sensor with the teachings of Jahagirdar. For the foregoing reasons, we conclude that Petitioner has shown by a preponderance of the evidence that claims 3, 4, 10–14, 19, 48, 49, and 51 would have been obvious over the combination of Jahagirdar and Schultz.

5. Claim 5

Claim 5 depends from claim 3, which depends from claim 1, and recites “wherein the location indicator is activated only for a period of time.” Ex. 1001, 14:22–23. Petitioner asserts that Jahagirdar teaches this limitation because controller 504 sets a timer related to the new display information to deactivate display element 516 automatically after a predetermined period of time. Pet. 42–43 (citing Ex. 1004, 5:55–65; Ex. 1012 ¶ 91). More specifically, Petitioner points to an embodiment in Jahagirdar in which display element 516 displays a blank screen, then displays new display information after actuation of key 150, and finally redisplay a blank screen when a timer expires. Pet. Reply 17 (citing Ex. 1004, 5:55–65; Ex. 1020 ¶ 8).

Patent Owner argues that display element 516 is not automatically deactivated, but is only deactivated manually when the user opens the phone. PO Resp. 26. This argument relates to Patent Owner’s previous argument

that configuration (b) in claim 1—wherein the visible indicator is activated at least to indicate an activation signal from the switch—is not satisfied by Jahagirdar because closing the phone is the only way to activate display element 516. As discussed above with respect to claim 1, however, an activation signal activates the visible indicator when display element 516 provides visual information to display area 130, causing the screen to change from blank to displaying information. *See* Ex. 1004, 5:55–65; Ex. 1020 ¶ 6. We agree with Petitioner that the location indicator (display element 516) is “activated only for a period of time,” as recited in claim 5, because expiration of a timer deactivates the display of information on display element 516. *See* Ex. 1004, 5:55–65; Ex. 1020 ¶ 8. Accordingly, we conclude that Petitioner has shown by a preponderance of the evidence that claim 5 would have been obvious over the combination of Jahagirdar and Schultz.

6. *Claim 52*

Independent claim 52 recites a “method of operating a product which includes a visible luminous indicator, an energy consuming load and a power source for powering the load, the method including the steps of operating a user interface switch . . . which is not a serial link in a circuit from the power source to the load to power the load, to control operation of the microchip.” Ex. 1001, 16:31–37. We agree with and adopt Petitioner’s contentions regarding Jahagirdar’s disclosure of these limitations, which are similar to its contentions with respect to commensurate limitations in claim 1. *See* Pet. 52–56. Claim 52 further recites that the user interface switch is a touch sensor type switch. Ex. 1001, 16:34–35. For the reasons discussed above with respect to claim 1, we agree that a person of ordinary

skill in the art would have combined a touch sensor as taught by Schultz with the teachings of Jahagirdar.

Claim 52 also recites “using the microchip to control the connection of the power source to the load and the activation of the indicator.”

Ex. 1001, 37–39. We agree with Petitioner that, as shown in Figure 5 of Jahagirdar, the microchip (controller 504) controls the connection from the power source (battery 128) to the load (display element 520) and the activation of the indicator (display element 516). *See* Pet. 57 (citing Ex. 1004, 3:33–35, 4:31–34). Finally, claim 52 recites activating the indicator “to show at least one of the following when the load is not activated: a condition of the product, an activation of the switch, and a power level of the power source.” Ex. 1001, 16:39–43. For the reasons discussed above with respect to configurations (a)–(c) recited in claim 1, we agree with Petitioner that the combination of Jahagirdar and Schultz teaches this limitation.

For the foregoing reasons, we conclude that Petitioner has shown by a preponderance of the evidence that claim 52 would have been obvious over the combination of Jahagirdar and Schultz.

III. CONCLUSION

Based on the evidence and arguments, Petitioner has demonstrated by a preponderance of the evidence that claims 1, 3–5, 10–14, 19, 48, 49, 51, and 52 of the ’970 patent would have been obvious over the combination of Jahagirdar and Schultz.

IV. ORDER

Accordingly, it is:

ORDERED that claims 1, 3–5, 10–14, 19, 48, 49, 51, and 52 of the '970 patent have been shown to be unpatentable; and

FURTHER ORDERED that, because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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