UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

GUI GLOBAL PRODUCTS, LTD., D/B/A GWEE,
Patent Owner

Case IPR2021-00336

U.S. Patent No. 10,259,021

PETITIONERS' REPLY TO PATENT OWNER'S RESPONSE

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1028	[RESERVED]
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I. INTRODUCTION

Petitioners submit this Reply to Patent Owner's ("PO") Response ("POR") concerning claims 1-19 of U.S. Patent 10,259,021 ("the '021 patent). PO's arguments should be rejected and the claims found unpatentable and cancelled for at least the reasons set forth in the Petition and accompanying exhibits, the Board's decision to institute *inter partes* review ("Decision"), the cross-examination testimony of Dr. Horenstein, and the additional reasons below.

PO relies on incorrect premises about *Kim*'s disclosure and the law of obviousness, which, once corrected, confirm the unpatentability of the challenged claims. As to *Kim*, PO incorrectly argues, for example, that: *Kim*'s watch-type embodiment must use a TOLED display; both bodies of the watch-type embodiment must contain a screen; and hinge 100d in *Kim*'s watch-type embodiment is a single piece and must be separable. PO also selectively argues that *Kim*'s disclosure can be combined when it suits its purpose while arguing the opposite when Petitioners do so.

As to the law of obviousness, PO incorrectly assumes or argues that: a POSITA is an automaton; obviousness requires bodily incorporation of features; and a proposed modification must be the preferred or the best option to be obvious.

Additionally, the Board should discount or disregard Dr. Horenstein's declaration because many of the arguments and figures in his declaration,

purportedly drafted at his direction (EX1031, 87:8-89:4), are conspicuously identical to arguments and figures raised in the POPR that the Board refused to credit as mere attorney argument (Decision, 23, 24, 27), even though Dr. Horenstein did not begin work on this matter until two months after PO submitted its POPR (EX1031, 84:14-17).[1]

II. *KIM* DISCLOSES OR RENDERS OBVIOUS THE FIGURE A EMBODIMENT

A. *Kim* Discloses the Figure A Embodiment

Although PO admits that "*Kim* does describe a watch-type device in which sub-device 300 is coupled in an overlapping manner to the second body, in a state where the first and second bodies are coupled to one another," it argues that Figure A is not disclosed. POR, 6-7. PO is wrong. *Kim* states:

> A method of coupling the third body (i.e., the sub-device) is ***coupled to one of the first and second bodies in a state that the first and second bodies are coupled*** will now be described. The

[1] By agreement of the Parties, Dr. Horenstein's deposition can be used in this proceeding. EX1031, 89:1-9.

method of coupling the sub-device in an ***overlapping manner to the second body will now be described for the sake of brevity***.[2]

EX1010, ¶260. Figure A is an example graphical representation of what *Kim* explicitly teaches in words.

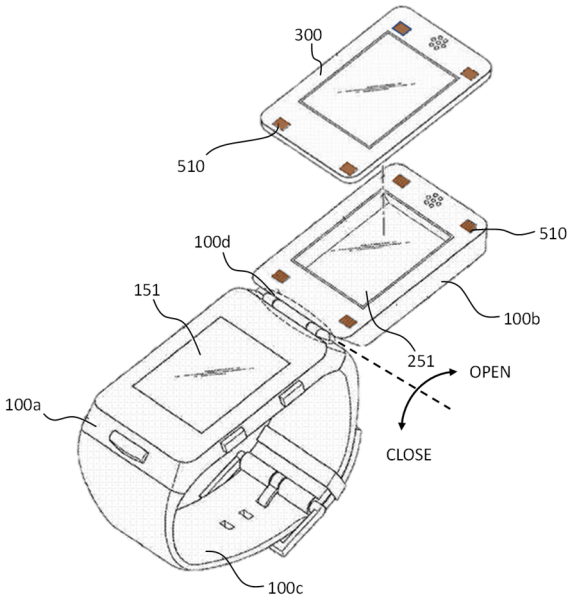

Figure A

According to PO, *Kim* teaches in connection with Figure 15B that the sub-device can only be coupled to the "top" of the second body when the first and second bodies are in a "closed" position. POR, 6-9, 22-24. Again, PO is wrong. *Kim* states that Figure 15B is one representation of this general concept, and that only this one example representation is shown "for the sake of brevity." EX1010, ¶260. *Kim* itself

[2] All emphases added unless noted otherwise.

refutes PO's argument because it teaches that "a coupling member 510 for fixing the sub-device is provided ***on at least one side of the second body*** of the main device." EX1010, ¶261. Thus, a POSITA would have understood that *Kim*'s disclosure regarding how a sub-device can be selectively coupled to the watch-type device of Figure 15A is not limited to what is shown in Figure 15B. Petition, 20-22; EX1002, ¶¶84-86. Put another way, Kim teaches that the sub-device can be coupled to the top of the second body ***or*** to the bottom of the second body, as depicted in Figure A.

PO also misunderstands *Kim* a second way: PO repeatedly states that in the embodiment of Figure 15A, the hinge must be removable—i.e., that the first and second bodies must be capable of separating from one another. POR, 5, 20, 26. That is also incorrect. *Kim* requires that the hinge ***must*** separate only when one of the two bodies is a sub-device (EX1010, ¶258), it ***does not*** require that the hinge be separable in embodiments, such as Figure 15A, where the two bodies comprise the main device and a ***separate*** sub-device is selectively coupled to the main device (EX1010, ¶¶255-257).

PO also argues that Figure A would not be as "attractive" or as "functional and practical" as what is shown in Figure 15B. POR, 8-9. But none of that refutes *Kim*'s express teaching that the sub-device can be coupled to ***either side*** of the second body.

B. The Figure A Embodiment Would Have Been Obvious in View of *Kim*

While *Kim* expressly discloses in words an embodiment that Petitioners depicted graphically in example form in Figure A, at a minimum *Kim* renders Figure A obvious. Petition, 23-25; EX1002, ¶¶89-97. Petitioners' obviousness arguments were supported by eight pages of testimony by Dr. Kiaei explaining (including specific citations to *Kim*) why a POSITA would have recognized the similarities between *Kim*'s Figures 11B and 15A, and been motivated to adapt and apply *Kim*'s disclosure with respect to Figure 11B to detachably couple sub-device 300 to the second body 100b of the watch type embodiment in the example manner shown in Figure A. EX1002, ¶¶89-97. PO does not address, much less refute, any of this testimony and evidence. Instead, PO raises a number of factually incorrect and/or legally irrelevant arguments, none of which rebut Petitioner's obviousness evidence.

First, PO argues that Figure 15A has a "***single hinge***" 100d and, therefore, is incompatible with Figure 11B which has "the first and second bodies coupled together by ***more than one hinge member***." POR, 10. PO's understanding of *Kim* is myopic and, in any event, is factually incorrect. Initially, *Kim* does not limit the structure or implementation of hinge 100d in any way—it simply and broadly states that "[t]he second body may be configured to be connected by a hinge 100d to one side of the first body so as to be open or closed." EX1010, ¶256.

Moreover, PO's own expert contradicts its "single hinge" argument. Dr. Horenstein testified that hinge 100d is "depicted as a piano-type hinge that has ***cylindrical sections*** through which ***a hinge pin*** can be inserted. ***Some*** of the cylindrical sections have to be ***attached to 100B***, one or more, and ***one or more must be attached to a 100A***." EX1031, 81:16-82:7. Thus, the hinge depicted in Figure 15A also has more than one hinge member, just as in Figure 11B.

Dr. Horenstein also confirmed that an individual choosing a hinge for a design project would apply "common sense as to what type of hinge would work and which would not." *Id.*, 61:10-62:1. There is nothing in *Kim* that would suggest to a POSITA, much less require, that the folding watch-type embodiment of Figure A must have a hinge exactly as depicted in Figure 15A. Rather, a POSITA would have been able to use routine design skills to select the appropriate hinge, as Dr. Horenstein admits. *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1341 (Fed. Cir. 2017) (affirming finding of obviousness where "the court considered the simple and clear teachings of the art, the importance of common sense and ordinary creativity, and the conclusory character of [PO]'s expert's assertions of nonobviousness").

PO admits that Figure 11B depicts a hinge structure that "can accommodate the placement of sub-device 300 between the first and second bodies."[3] POR, 12. Nevertheless, PO argues that the hinge structure shown in Figure 11B could not be used in a watch-type embodiment as it "would not permit such full opening, because *Kim* only shows the folder-type device with a partially open cover." *Id.*, 16; EX2004, ¶57. PO maintains "full opening" is "desired and appropriate" for the watch-type embodiment to provide a "useful, dual-display configuration." *Id*. Initially, PO's "fully open" argument is a red herring. *Kim* does not require that bodies 100a and 100b in Figure 15A be "fully open." Rather, *Kim* merely states that hinge 100d allows the first and second bodies "to be open or closed." EX1010, ¶256. Moreover, on cross-examination, Dr. Horenstein disavowed this position and testified that the hinge arrangement of Figure 11B could be opened to 180 degrees. EX1031, 79:8-81:15.

At his deposition (but not in his declaration), Dr. Horenstein also added a requirement that the two screens in a dual-display embodiment must also be "co-

[3] PO additionally argues that any attempt by a POSITA to modify Figure A's hinge would create a gap that would cause harm or esthetic issues. POR, 30-32. That argument is refuted by PO's admission regarding Figure 11B.

planar." EX1031, 77:10-79:5. That is both irrelevant and contrary to *Kim*'s teaching. First, *Kim* does not require that the embodiment of Figure 15A must have two displays or provide a dual-display configuration. EX1010, ¶256 ("the first body ***may include*** a display unit"). Second, *Kim* does not require that it's folding dual-screen embodiments must be co-planar. Indeed, Figure 5 shows a dual-display main device implemented using a hinge similar to Figure 11B (which according to Dr. Horenstein, would result in the displays not being co-planar).[4]

PO also argues that the hinge arrangement shown in Figure 11B is not compatible with Figure 15A because *Kim* requires that the hinge in Figure 15A be "located such that the second body can be connected ***to one side of*** the first body," whereas in Figure 11B "the second body 100b is connected ***on top of*** the first body 100a." POR, 16 (emphasis in original). This is nothing but an attempt to create a distinction where none exists. Notably, *Kim* does not state that in Figure 11B the second body is connected on top of the first body—that is Petitioner's self-serving characterization of what is shown in Figure 11B. In Figure 11B the first and second

[4] PO itself argues that *Kim*'s teaching with respect to Figure 5—directed to a phone embodiment with a TOLED—are applicable to Kim's watch-type embodiment. POR, 27-30; EX2004, ¶¶59-62.

bodies are connected to each other on one side—just as *Kim* describes the arrangement with respect to Figure 15A. In other words, there is no meaningful difference in the location—i.e., on the side—where the first and second bodies are attached in Figure 11B versus 15A. Moreover, *Kim*'s Figure 5 shows using the same hinge arrangement as Figure 11B to implement a dual-display folder-type main device.

Second, PO argues that Figures 11B and 15A are not compatible because the sub-device in Figure 11B is allegedly shown to have a one- or two-line display, and downsizing such a sub-device so as to incorporate it into a watch-type form factor would result in a screen that is too small to be practical. POR, 18. *Kim* directly refutes this argument as it shows in Figures 15C and 15D watch-type embodiments that include a sub-device with a similar one- or two-line display.

Third, PO argues that Figure A would not have been obvious because the sub-device would have interfered with the proper operation and viewing of the TOLED screen in the second body 100b. POR, *passim*. These arguments rest on an (incorrect) unstated premise that the embodiment shown in *Kim*'s Figure 15A (or Figure A) requires that the second body 100b have a TOLED screen. *Id.*, 15 ("wearer may look through the TOLED cover 100b"), 28 ("[b]y providing the look-through capability—e.g., using a TOLED display—in the watch cover 100b"), 30 ("via the TOLED display of the folded second body 100b"), 31 ("[f]or TOLED screen 251 of

second body 100b to work properly…"). But Dr. Horenstein admitted on cross-examination that "*Kim* allows for one of those—for the second body to be a TOLED, ***but it does not require it***." EX1031, 65:3-16; EX1010, ¶257 ("second body 100b ***may be*** configured as a transparent display (TOLED)"). Thus, the entire premise of PO's TOLED-based attacks on the obviousness of Figure A falls away, and the Board should correctly reject them all.

Fourth, PO argues that the various embodiments in *Kim* are "not 'interrelated'" and that "the manner in which sub-devices may be coupled in the context of each device-type is likewise distinct." POR, 19. *Kim*, however, directly refutes PO:

> Embodiments for a control method in the mobile terminal 100 may now be described with reference to the accompanying drawings. ***Embodiments may be used singly and/or by being combined together.*** Embodiments may be implemented more easily when the display 151 includes the touchscreen.

EX1010, ¶179. PO relies on the first sentence in the paragraph above to argue that only *Kim*'s control methods can be combined. But the second sentence is not limited to control methods, and a POSITA would have understood it to encompass *Kim*'s physical embodiments as well. EX1002, ¶¶41-48, 94. This understanding is further

supported by the fact that immediately after this paragraph, *Kim* discusses the physical aspects of its embodiments for eighty-eight paragraphs before turning to the control methods.

But even if *Kim* did not include an express statement that its various embodiments may be combined together, *Kim* can still be used for everything it reasonably teaches to a POSITA. *Raytheon Corp. v. Sony Corp.*, 727 F.App'x 662, 667 (Fed. Cir. 2018). As noted above, Petitioners and Dr. Kiaei provided a detailed, reasoned explanation why a POSITA would have recognized the similarities between *Kim*'s Figures 11B and 15A, which PO did not rebut.

Fifth, PO repeats that *Kim* teaches the sub-device can only be coupled to the "top" of the second body when the first and second bodies are closed in the watch-type embodiment. POR, 22-26. As discussed in Section II.A, this argument fundamentally misunderstands *Kim*'s teachings.

Sixth, PO argues that the embodiment exemplified by Figure A has "too many operating issues that would prevent a POSITA from adopting it." POR, 33-36. More particularly, PO argues that Figure A does not allow for coupling and decoupling of the sub-device because of the forces exerted on the second body during these operations.

A POSITA is "a person of ordinary creativity, not an automaton." *Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1343 (Fed. Cir. 2020). PO

provides no evidence to suggest that these so-called issues were beyond a POSITA's skill to address by, for example, appropriately calibrating the coupling force between the main device and the sub-device and the strength of the hinge, and/or decoupling the sub-device from the end proximal to the hinge, rather than the distal end as depicted in Horenstein Figure 19.[5] *NuVasive, Inc., v. Iancu*, 752 F.App'x 985, 988 (Fed. Cir. 2018) (upholding Board's finding of obviousness because "[PO]'s expert testimony regarding the inoperability of the combination … is mere speculation and conclusory"); *Elbrus Int'l Ltd. v. Samsung Elecs. Co.*, 738 F.App'x 694, 698-99 (Fed. Cir. 2018) (PO's argument that the combination was unworkable was "basically irrelevant" because "the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, but rather whether a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention.").

[5] To the extent PO questioned Dr. Kiaei about such issues, he indicated that resolution "depends on the design." EX2002, 47:10-49:8, 101:22-104:11.

III. CLAIM 1 AND ITS DEPENDENT CLAIMS ARE OBVIOUS IN VIEW OF *KIM*

A. Kim Discloses or Suggests "When Coupled, the First Case Functions to Protect the Second Case"

PO argues that the main device's case ("first case") is incapable of protecting the sub-device's case ("second case") because the sub-device can be coupled only on "top" of the second body.[6] POR, 37-39. As discussed in the Petition, Dr. Kiaei's declaration and Section II, *Kim* discloses, or at a minimum renders obvious, Figure A. *See* Petition, 21-25; EX1002, ¶¶81-97. Thus, PO's premise is incorrect, rendering this argument irrelevant.

PO also argues that the Figure A watch-type embodiment is incapable of closing when the sub-device is coupled to the second body. POR, 40-41. This effectively rehashes the same argument PO raised as to why Figure A would not have been obvious, and is refuted for the same reasons. *See supra* Section II.B; Petition, 23-25; EX1002, ¶¶89-97.

B. Kim Discloses or Suggests "a First Magnet is Fully Disposed Within the Electronic Device"

As the Petition demonstrated, a POSITA would have understood Figure A (which is based on *Kim*'s Figures 15A and 15B) to depict the magnets 510 to be

[6] PO incorrectly switches "first" and "second" cases in its topic sentence.

flush with the sub-device's surface. Petition, 32-34, EX1002, ¶121. PO argues that these figures are not "sufficiently detailed for a [POSITA] to arrive at such a conclusion." POR, 42. However, these figures are perspective views which would also serve to illustrate three dimensional depths. *See also* Decision, 27. That Figure 10A may show an embodiment with raised magnets does not negate what Figures 15A and 15B would have taught a POSITA.

PO also argues that a POSITA would not have understood a magnet that is within and flush with the surface of the sub-device to be disposed therein. POR, 41-42. But PO does not provide any evidence or reasoned explanation in support of this argument (POR, 41-42; Ex. 2004, ¶75), nor does PO seek a construction consistent with this supposed understanding.

Finally, PO fails to effectively rebut Petitioners' argument that disposing magnets 510 in the sub-device would have been obvious to a POSITA. Petition, 33-34, EX1002, ¶¶122-127. First, PO faults Petitioners for failing "to adequately explain why the 'fully disposed' option would be the one preferred by a POSITA." POR, 43. That is not the obviousness inquiry. A particular combination ***need not*** be the preferred, or the most desirable, combination described in the prior art in order to provide motivation or be obvious. *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004). And Petitioners provided a reasoned explanation for why a POSITA would

have been motivated to dispose the magnets in the sub-device. Petition, 33-34, EX1002, ¶¶122-127.

PO also speculates regarding obstacles that allegedly would have prevented disposing magnets in the sub-device, such as scratching, the displays adhering to one another, and diminishing magnetic forces. POR, 43-45. Although Dr. Horenstein now parrots these arguments in his declaration (EX2004, ¶¶78-79), they remain at their core the unsupported attorney arguments the Board declined to credit in the Decision. Decision, 27-28. A POSITA is presumed to have basic ability and ordinary creativity. *Facebook*, 973 F.3d at 1343. Neither PO nor Dr. Horenstein provide any evidence, for example, that dust or sand could in fact scratch the screen(s) that a POSITA would have used or that such screen(s) would have adhered to each other; nor do they provide any evidence that a POSITA would have been incapable of selecting appropriately sized and shaped magnets to couple the main device and sub-device when the magnets are embedded in the sub-device. *NuVasive*, 752 F.App'x at 988. That failure is fatal in view of the fact that it was known for POSITA to embed magnets within electronic devices of the type represented by Figure A. EX1002, ¶¶125-127.

C. *Kim* Renders Obvious Using Both Magnets and Raised Shapes and Complementary Recessed Areas

As the Petition demonstrates, it would have been obvious to a POSITA to use both magnets and hooks/recesses as taught by *Kim* to couple the sub-device to the main device. Petition, 35-38; EX1002, ¶¶128-143.

PO first argues that using both magnets and hooks would add "no discernable benefit" and that "where the force needed to overcome the magnetic attraction different [*sic*] from the force required to dislodge the hooks, then the weaker of the two methods of closure would become superfluous." POR, 46-47. Dr. Horenstein parrots these assertions without providing further support. EX2004, ¶83. That argument is premised on an implicit claim construction that PO has failed or refused to advance—i.e., that magnetic force must be the ***only*** and/or ***last*** force overcome to decouple the sub-device's case ("second case") from the main device's case ("first case"). The plain meaning of the claim requires no such thing. It is unrefutably true that in the arrangement exemplified by Figure A the sub-device could not be decoupled from the main device unless the magnetic force attracting them to each other was overcome (regardless of whether additional forces would also have to be overcome).

PO also argues that a POSITA would not have been motivated to use both magnetic and mechanical techniques to couple the sub-device and main device, and

that *Birger* advocates for use of magnets over mechanical attachments. POR, 47. PO misunderstands *Birger*, which teaches providing magnetic means to "more firmly" secure the earphones to the housing only after first teaching mechanical means for holding them together. EX1018, 10:26-11:2, 11:17-19. Thus, *Birger* confirms that a POSITA knew to use both magnetic and mechanical techniques to achieve a more secure (yet still detachable) coupling. EX1002, ¶¶133-134. *Koh,* also cited in the Petition as evidence in support of this point (Petition, 36; EX1002, ¶¶135-139; EX1012, ¶¶19, 46-48), is entirely ignored by PO and, therefore, is unrebutted. And, of course, *Kim* itself teaches using both magnetic and mechanical techniques to attach a sub-device to the main device. Petition, 37-38, EX1002, ¶¶140-141.

Finally, PO alleges that a POSITA would have been unable to use both magnets and hooks/recesses to couple the sub-device and main device. POR, 47-50. Again, PO assumes that a POSITA would have been an automaton bereft of any creativity or skill to address the so-called "problems" it conjures up. PO fails to provide any evidence to suggest, for example, that a POSITA was incapable of exercising creativity and skill to select a hinge strong enough to withstand forces that ordinary use of the device would entail, that a POSITA necessarily had to use two or four hooks, or that a POSITA was incapable of incorporating both magnetic and mechanical techniques in a wrist worn device. *See NuVasive*, 752 F.App'x at 988; EX1002, ¶¶132-143. In any event, it is well-settled that "the test for

obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference but rather whether a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention." *E.g.*, *Polygroup Ltd. v. Willis Elec. Co*., 780 F.App'x 880, 884 (Fed. Cir. 2019); *Elbrus*, 738 F.App'x at 698.

D. *Kim* Discloses or Suggests a Portable Switching Device "Configured to Activate, Deactivate, or Send into Hibernation"

PO argues that Petitioners failed to explain how *Kim*'s watch-type main device activates, deactivates or hibernates the sub-device.[7] POR, 50-53. PO is wrong. Petition, 38-42; EX1002, ¶¶144-158. Notably, PO relies solely on attorney argument as Dr. Horenstein apparently refused to support a single assertion made by PO on this issue. Unsurprising, because PO's arguments directly contradict Dr. Horenstein's other testimony. *Compare* POR, 50-51 ("Petitioner's contention that *Kim*'s disclosure for 'automatic controlling of a terminal operation (menu display)' by a 'bar-type mobile terminal,' is 'equally applicable' to watch-type device … is

[7] PO also separately offers only attorney argument that Petitioners failed to show that *Kim* discloses or suggests a "switching device." POR, 44-45. Petitioners have demonstrated why the main device is a switching device. Petition, 25-28; EX1002, ¶¶98-105.

unwarranted") *with* EX2004, ¶40 ("When describing the control methods, *Kim* discusses only a single one of the different device-types in each instance … [because] a POSITA would have recognized that *Kim* already explained that the control methods 'may be used singly and/or by being combined together.").

E. As Required by Claim 7, *Kim* Renders Obvious that the "Lid is Recessed to Configure to the Electronic Device"

First, as explained in Section III.C, PO's arguments that *Kim* does not disclose or render obvious the use of both magnets and recessed areas (and raised shapes) are unavailing. Accordingly, *Kim* discloses or renders obvious this limitation for the reasons stated in the Petition. Petition, 48-49; EX1002, ¶¶181-185.

Second, the Petition also demonstrated that it would have been obvious to incorporate a recess in the second body that generally conforms to the shape of and receives the sub-device in a manner similar to that disclosed in *Kim*'s Figure 10A. Petition, 49; EX1002, ¶¶183-185. PO incorrectly argues that a POSITA would not have applied *Kim*'s disclosure regarding recesses without also utilizing raised magnets. POR, 54; EX2004, ¶92. That argument lacks both legal and factual support. The Board should also reject PO's arguments that, yet again, are premised on a POSITA lacking creativity and basic ability to address simple implementation details while failing to provide any evidence that the alleged problems were beyond a POSITA's ability to address.

IV. *KIM* RENDERS OBVIOUS CLAIM 9

PO raises four arguments regarding why allegedly *Kim* does not render claim 9 obvious. ***First***, PO argues that *Kim* does not disclose or suggest Figure A (POR, 57), but this argument is unavailing as already discussed in Section II.

Second, PO argues that *Kim* does not teach or suggest magnetically coupling the first body to the second body. *Id* As demonstrated in the Petition, *Kim* and a POSITA's knowledge and skill would have made it obvious to employ the magnet(s) in the lid to secure the lid in a closed position by magnetically coupling the lid to the first body (Petition, 50-52; EX1002, ¶¶187-197), and PO fails to address much less rebut this evidence.

Third, relying on claim 1, PO argues that claim 9 "as a whole" requires that the main device ("electronic device") always be coupled to the sub-device ("switching device"), without advancing—much less supporting—a claim construction consistent with this position. POR, 57-58. Claim 1's plain language contradicts PO. Claim 1 clearly contemplates that the electronic device and switching device can be coupled or separated from each other. EX1001, claim 1 ("the switching device and the electronic device are configured to ***selectively couple*** to each other … ***when coupled***, the first case functions to protect the second case"); EX1002, ¶196. In other words, claim 1 does not require that the electronic device and the switching device always remain coupled.

Fourth, PO argues that the claim requires that the main device's case ("first case") function to protect the sub-device's case ("second case") when the lid is secured in the closed position. POR, 58. That argument is directly refuted by claim 1 which merely requires that "***when coupled***, the first case functions to protect the second case."

V. *KIM* RENDERS OBVIOUS CLAIM 19

PO fabricates a strawman rather than engage with Petitioners' argument, which is: *Kim* discloses or suggests claim 19 by disclosing that the sub-device ("switching device") turns on and off the main device ("electronic device") based on the two devices' coupling status or based on a user manipulating the sub-device. Petition, 56. PO, therefore, has conceded the unpatentability of claim 19.

VI. *KIM* IN COMBINATION WITH *KOH* RENDERS CLAIM 10 OBVIOUS

A. A POSITA Would Have Been Motivated to Combine *Kim* and *Koh*

PO argues that a POSITA would not have been motivated to combine *Kim* and *Koh* (POR, 59-61), but proceeds to refute its own argument by demonstrating that they were in fact combinable (*id.*, 61-63). Arguing that a POSITA would have "more likely envisioned" PO's combination rather than Petitioners' (*id.*, 62), is insufficient to rebut obviousness. *Fulton*, 391 F.3d at 1200; *Gen. Elec. Co. v. Raytheon Techs. Corp.*, 983 F.3d 1334, 1351 (Fed. Cir. 2020) ("Our precedent ...

does not require that the motivation be the best option, only that it be a suitable option from which the prior art did not teach away.") (cleaned up). PO's arguments for an alternative combination do not rebut Petitioners' reasoned arguments and evidence for why a POSITA would have combined *Kim* and *Koh* in the manner set out in the Petition. Petition, 56-65; EX1002, ¶¶208-232.

PO also attacks the *Kim-Koh* combination because it "does not afford any motivation for using hooks in a watch-type device." POR, 61. PO misses the mark. The *Kim-Koh* combination meets claim 1 because the headset sub-devices ("electronic device") comprise grooves ("comprise at least one element selected from the group consisting of … grooves") configured to engage with coupling protrusions ("configured to correspond to complementary surface elements") on the main device's second body ("on the switching device"), not because the combination involves hooks. Petition, 59-61; EX1002, ¶228.

B. The Combination of *Kim* and *Koh* Discloses or Suggests "When Coupled, the First Case Functions to Protect the Second Case"

PO's argument that the combination of *Kim* and *Koh* does not disclose or suggest "when coupled, the first case functions to protect the second case," is a strawman. More particularly, PO argues that combining the teachings of these references in a manner different than the one suggested by Petitioners would not

have met this limitation. POR, 61-63. Thus, PO rebuts an argument of its own making, not Petitioners'. Petition, 56-65; EX1002, ¶¶209-232.

PO also argues that a user could not decouple the sub-devices from the main device using one hand. POR, 62-68. *Koh* rebuts that argument; it teaches using one hand to remove the headset from the housing using either a lifting action (using a groove) or a pressing action (using the elasticity of the spring connected to the coupling protrusion). EX1012, ¶47; *see* Petition, 60-61; EX1002, ¶¶224-225.

C. The *Kim-Koh* Combination Discloses or Suggests that the "Switching Device" is "Configured to Activate, Deactivate, or Send into Hibernation" the Portable Electronic Device

PO raises three arguments why in the *Kim-Koh* combination the watch-type main device ("switching device") allegedly is not configured to activate, deactivate or send into hibernation the earphone sub-devices ("electronic device"). All are mere attorney arguments without any evidentiary support as Dr. Horenstein again apparently (and sensibly) refused to support any of PO's assertions.

First, PO argues that *Kim* does not teach that the watch-type main device[8] can activate, deactivate or hibernate Koh's headset. POR, 70. This argument effectively rehashes the same argument raised and addressed above in Section III.D. ***Second***, PO argues that *Kim*'s teachings cannot be applied to *Koh*'s headsets. *Id.* 70-71. This

[8] PO mistakenly refers to the "watch-type sub-device 100a." POR, 70.

is irrelevant. As explained in the Petition, *Kim* already discloses or suggests the watch-type main device ("switching device") activating, deactivating or sending into hibernation an earphone sub-device("electronic device'). Petition, 61-62; EX1002, ¶226. A POSITA would have looked to *Koh* for its teachings regarding how to detachably couple an earphone to a watch-type device. Petition, 60-62; EX1002, ¶¶227-232. ***Finally***, PO advances the non-sequitur that the Petition does not "explain[] how *Koh*'s storage unit 200 might itself be a switching device." POR, 71. Of course, Petitioners never advanced such an argument—rather, it is *Kim*'s watch-type main device that correspond to the claimed switching device.

VII. *KIM* IN COMBINATION WITH *LEE* RENDERS CLAIMS 16-17 OBVIOUS

Contrary to PO's arguments, which are substantially the same for both claims 16 and 17 (POR, 71-73), a POSITA would have been motivated to combine *Kim* and *Lee* because *Kim* discloses detecting the coupling status of the main device and the sub-device and *Lee* provides implementation details for how to do so using a Hall sensor. Petition, 65-67; EX1002, ¶¶240-243. Moreover, that *Lee* teaches use of a Hall sensor in a bi-fold configuration does not detract from *Lee*'s teaching that a Hall sensor can be used to determine the relative position of two bodies—the very reason that a POSITA would have been motivated to implement *Lee*'s Hall sensor in the

Kim-Lee combination to detect the coupling status of the sub-device to the main-device. *Id*.

PO additionally argues that *Lee* does not teach actuating an electronic device based on coupling status. POR, 72-73. But that misunderstands the arguments and evidence in the Petition. *Kim* itself teaches changing a state and/or operation of the sub-device based on detecting its coupling status with the main device, for example, turning the sub-device (or a component, e.g., its display) on or off. Petition, 65-66 (and evidence cited there). *Lee* is used in the combination to show that it would have been obvious to use, with regard to claim 16, the magnet in the sub-device ("first magnet") and a Hall sensor in the second body of the main device to detect the coupling status that results in changing a state and/or operation of the sub-device ("employed in actuating the electronic circuit"), and with regard to claim 17, a magnet in the lid of the main device ("second or third magnet is employed in the lid") to detect the coupling status with the sub-device and change its operation accordingly ("actuate the electronic circuit"). Petition, 65-69.

VIII. *KIM* IN COMBINATION WITH *JIANG* RENDERS CLAIM 18 OBVIOUS

Other than arguing that claim 18 is not unpatentable due to its dependence on claim 1, which has already been addressed in Sections II and III, PO's only additional argument is that a POSITA would not have been motivated to implement

IrDA in *Kim*'s watch-type embodiment, and thus there would be no IrDA communication to combine *Jiang*'s VCSEL into. POR, 74. PO is wrong because *Kim* teaches IrDA communication regardless of the form factor of its embodiment. *Kim*, ¶¶81, 183; Petition, 69-71; EX1002, ¶¶248-258.

IX. CLAIMS 2-6, 8, AND 11-15 ARE UNPATENTABLE

PO does not present any arguments unique to claims 2-6, 8, and 11-15. These claims, therefore, are obvious for the reasons explained in the Petition and the supporting evidence. Petition, 44-49 and 53-55.

X. CONCLUSION

The Board should find claims 1-19 unpatentable and cancel them.

Date: December 28, 2021

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

The undersigned hereby certifies that the foregoing Petitioners' Reply to Patent Owner's Response contains 5,559 words, excluding those portions identified in 37 C.F.R. § 42.24(a), as measured by the word-processing system used to prepare this paper.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of Petitioners' Reply to Patent Owner's Response was served on December 28, 2021 by filing this document through the PTAB E2E System as well as by delivering a copy via email directed to the attorneys of record for Patent Owner at the following addresses:

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