

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

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

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Case IPR2021-00338

U.S. Patent No. 10,589,320

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**PETITIONERS' ORAL HEARING DEMONSTRATIVES**

United States Patent and Trademark Office  
Before the Patent Trial and Appeal Board

***Samsung Electronics Co., Ltd. and Samsung Electronics  
America, Inc.***  
**v.**  
***GUI Global Products, Ltd.***

Hearing Date: April 12, 2022

*IPR2021-00335 (US 10,259,020)*

*IPR2021-00336 (US 10,259,021)*

*IPR2021-00337 (US 10,562,077)*

*IPR2021-00338 (US 10,589,320)*

# Petitioners' Presentation

## OVERVIEW

1. Overview of Instituted Grounds
2. Overview of Challenged Patents
3. Overview of Kim
4. Kim (Ground 1)
  - a) '020 Ground 1
  - b) '021, '077, and '320 Ground 1
5. Kim + Koh (Ground 2)
6. Kim + Lee (Ground 3)
7. Kim + Jiang ('020 and '021 Ground 4)

## INSTITUTED GROUNDS

Patent IPR	Challenged Claims	No Unique PO Argument
<b>US 10,259,020</b> <b>IPR2021-00335</b>	Ground 1: claims 1-9, 11-15, and 19 obvious over Kim Ground 2: claim 10 obvious over Kim in view of Koh Ground 3: claims 16 and 17 obvious over Kim in view of Lee Ground 4: claim 18 obvious over Kim in view of Jiang	'020 patent: claims 2-6, 8, and 11-15  '021 patent: claims 2-6, 8, and 11-15
<b>US 10,562,077</b> <b>IPR2021-00337</b>	Ground 1: claims 1-8 obvious over Kim Ground 2: claim 11 obvious over Kim in view of Koh Ground 3: claims 9-10 obvious over Kim in view of Lee	'077 patent: claims 2-4, 6-8, 10, and 12-13
<b>US 10,589,320</b> <b>IPR2021-00338</b>		'320 patent: claims 2-4, 6-8, 10, and 12-13

IPR2021-00335, Petition, Paper No. 3 at 1-2; Petitioners' Reply, Paper No. 17 at 26  
 IPR2021-00336, Petition, Paper No. 3 at 1-2; Petitioners' Reply, Paper No. 18 at 26  
 IPR2021-00337, Petition, Paper No. 3 at 1-2; Petitioners' Reply, Paper No. 18 at 26  
 IPR2021-00338, Petition, Paper No. 3 at 1-2; Petitioners' Reply, Paper No. 18 at 26

# The Challenged Patents



## GUI PATENTS

While the bulk of the '020 patent describes methods of cleaning and aspects of a cleaning device, it mentions that “[i]n addition to their cleaning functionality, the cleaning components of the application have a functionality of being able to activ[ate] magnetic switches on devices having such switches.” *Id.*, 11:53-56. In one embodiment, the cleaning device may also have “additional functionality such as a remote control, laser pointer or the like” and, paradoxically, the cleaning device “may or may not include cleaning capabilities but will include a rare earth magnet or magnets.” *Id.*, 16:21-38. Functionality may also include, “pointing devices,” “remote functionality,” “flash drive,” “earplugs,” “credit card reader, microphone, and the like.” *Id.*, 16:39-49.

# GUI PATENTS

## '020 Patent

1. A system comprising:  
a portable switching device coupled to a portable electronic device;  
wherein:  
the switching device and the electronic device are configured to selectively couple to each other employing magnetic force from a **first magnet disposed within the switching device;**  
the **switching device** comprises a **first case;**  
the **electronic device** comprises a **second case** and an electronic circuit that is responsive to the switching device;  
the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
the portable switching device is configured to activate, deactivate or send into hibernation the portable electronic device; and  
when coupled, the **second case** functions to protect the **first case.**

## '021 Patent

1. A system comprising:  
a portable switching device coupled to a portable electronic device;  
wherein:  
the switching device and the electronic device are configured to selectively couple to each other employing magnetic force;  
the **switching device** comprises a **first case;**  
the **electronic device** comprises a **second case** and an electronic circuit that is responsive to the switching device;  
a **first magnet is fully disposed within the electronic device;**  
the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
the portable switching device is configured to activate, deactivate or send into hibernation the portable electronic device; and  
when coupled, the **first case** functions to protect the **second case.**



# GUI PATENTS

## '021 Patent

1. A system comprising:  
 a portable switching device coupled to a portable electronic device;  
 wherein:  
 the switching device and the electronic device are configured to selectively couple to each other employing magnetic force;  
 the switching device comprises a first case;  
 the electronic device comprises a second case and an electronic circuit that is responsive to the switching device;  
 a first magnet is fully disposed within the electronic device;  
 the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
 the portable switching device is configured to activate, deactivate or send into hibernation the portable electronic device; and  
 when coupled, the first case functions to protect the second case.

6. The system of claim 1 wherein the switching device includes a lid and hinge attaching the lid to the switching device.

7. The system of claim 6 wherein the lid is recessed to configure to the electronic device.

## '077 Patent

1. A system comprising:  
 a portable switching device coupled to a portable electronic device;  
 wherein:  
 the switching device and the electronic device are configured to selectively couple to each other employing magnetic force;  
 the switching device comprises a first case;  
 the electronic device comprises a second case and an electronic circuit that is responsive to the switching device;  
 a first magnet is fully disposed within the electronic device;  
 the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
 the portable switching device is configured to activate, deactivate, or send into hibernation the portable electronic device;  
 the electronic device plays, pauses and/or changes the volume of a remote device;  
 the switching device includes a lid and hinge attaching the lid to the switching device;  
 the lid is recessed to configure to the electronic device; and  
 when coupled, the first case functions to protect the second case.

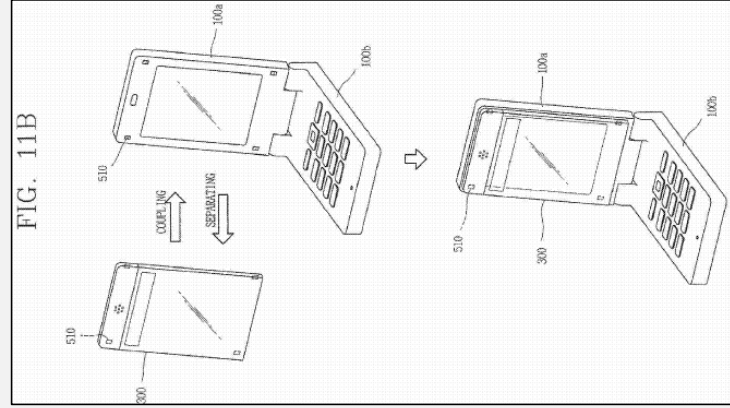
## '320 Patent

1. A system comprising:  
 a portable switching device coupled to a portable electronic device;  
 wherein:  
 the switching device and the electronic device are configured to selectively couple to each other employing magnetic force;  
 the switching device comprises a first case;  
 the electronic device comprises a second case and an electronic circuit that is responsive to the switching device;  
 a first magnet is fully disposed within the electronic device;  
 the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
 wherein the second case is decoupled from the first case by overcoming magnetic force the portable switching device is configured to activate, deactivate, or send into hibernation the portable electronic device;  
 the electronic device plays or pauses a remote device;  
 the switching device includes a lid and hinge attaching the lid to the switching device;  
 the lid is recessed to configure to the electronic device; and  
 when coupled, the first case functions to protect the second case.

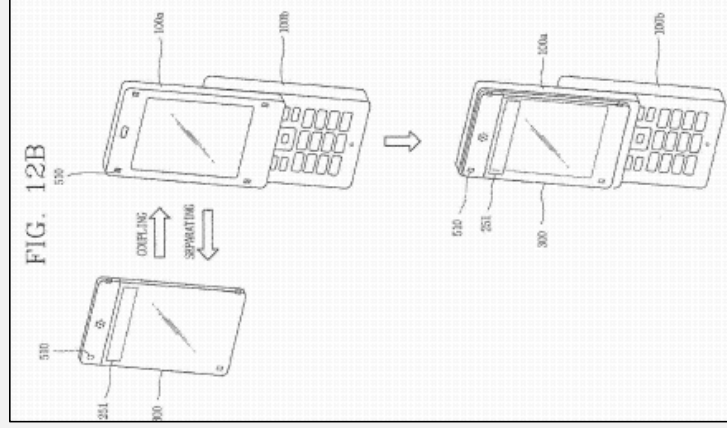
# Overview of Kim

# RELATED EMBODIMENTS DISCLOSED BY KIM

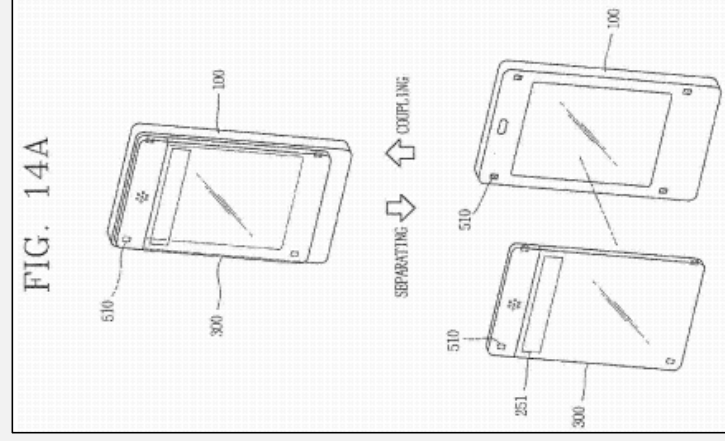
## Folder



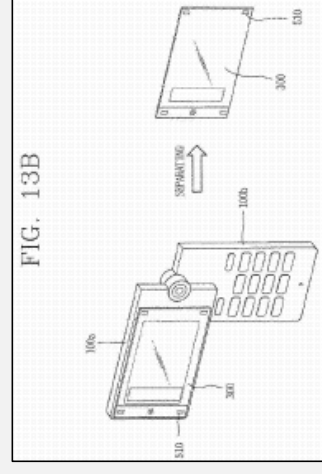
## Slide



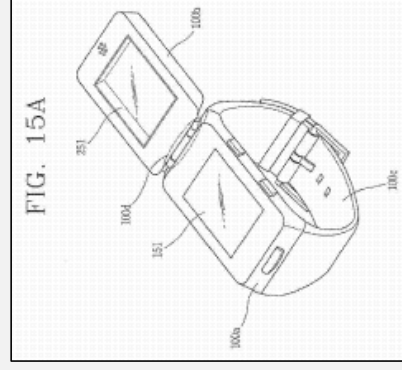
## Bar



## Swivel



## Watch



## KIM DISCLOSES MULTIPLE MAIN & SUB-DEVICE CONFIGURATIONS THAT CAN BE COMBINED

48. My opinion is based at least on the fact that (i) *Kim* discloses various interrelated embodiments (*id.*, *passim*), (ii) *Kim* expressly discloses that its “[e]mbodiments may be used singly and/or by being combined together” (*id.*, ¶179), (iii) *Kim* discloses that mobile terminals can implement “more or less” components than disclosed in Figure 1 (*id.*, ¶71), and (iv) *Kim* discloses that sub-devices can be configured to include all the same elements as the main device or only the elements suitable for implementing certain functions (*id.*, ¶187).

e.g., IPR2021-00335, Kiaei Declaration, Ex. 1002 at ¶ 48

**[0069]** Embodiments of the present invention may be applicable to various types of terminals. Examples of such terminals may include mobile terminals as well as stationary terminals, such as mobile phones, user equipment, smartphones, DTV, computers, digital broadcast terminals, personal digital assistants, portable multimedia players (PMP) and/or navigators.

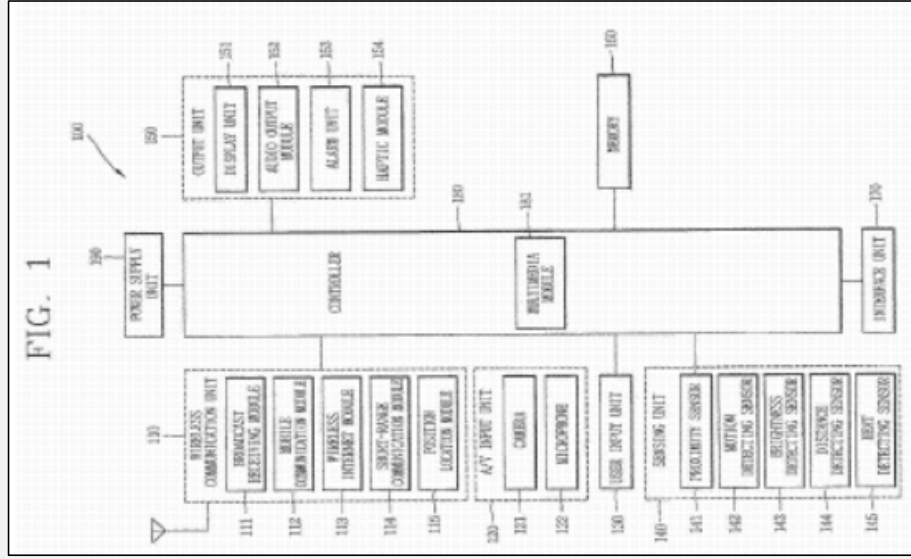
**[0070]** A further description may be provided with regard to a mobile terminal, although such teachings may apply equally to other types of terminals.

e.g., IPR2021-00335, Kim, Ex. 1010 at ¶¶ 69-70; see also, Petition, Paper No. 3 at 9

**[0179]** 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.

e.g., IPR2021-00335, Kim, Ex. 1010 at ¶ 179

# KIM'S MAIN AND SUB-DEVICE(S) CAN INCLUDE ALL THE SAME COMPONENTS



e.g., IPR2021-00335; Kim, Ex. 1010 at Fig. 1; see also, Petition, Paper No. 3 at 10

**[0182]** The main device (i.e., the first device) 100 may include all the elements of the mobile terminal as described above with reference to FIG. 1 and, besides those elements, the main device may additionally include a coupling unit 210 for mechanically coupling the sub-devices (i.e., the second devices), a coupling detection unit 220 that detects whether or not the sub-devices are coupled, and a connection unit 230 that electrically connects the sub-devices and the main device to allow signals or data to be transmitted or received therebetween.

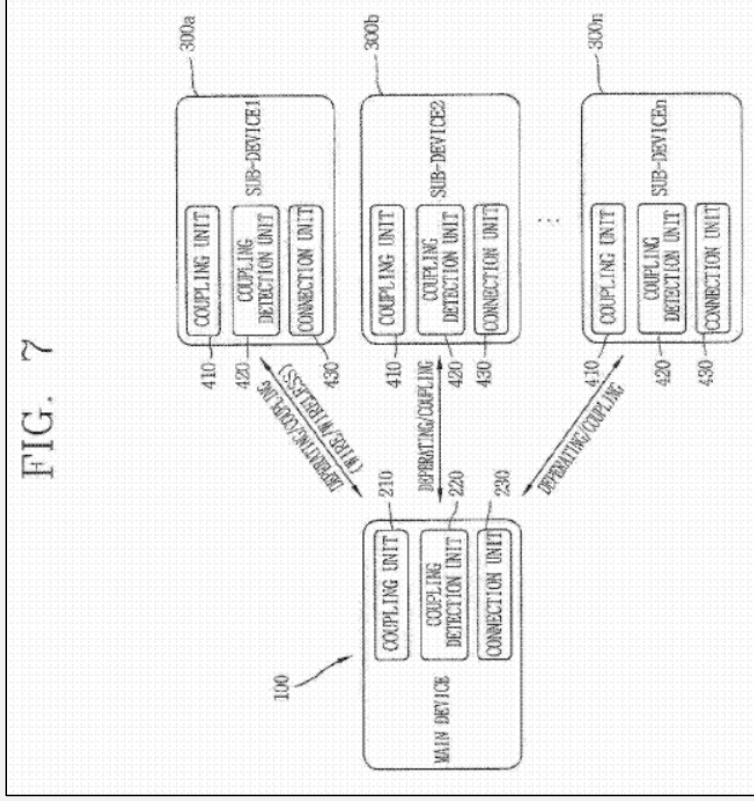
e.g., IPR2021-00335; Kim, Ex. 1010 at ¶ 182; see also, Petition, Paper No. 3 at 12, 26, 44, 69

**[0187]** Each of the sub-devices 300 may be configured to include all the same elements as those of the main device.

e.g., IPR2021-00335; Kim, Ex. 1010 at ¶ 187; see also, Petition, Paper No. 3 at 12

# KIM'S MAIN DEVICE CAN COUPLE TO MULTIPLE SUB-DEVICES

FIG. 7



**[0181]** As shown in FIG. 7, the present invention relates to a mobile terminal including a main device (first device) 100 and one or more sub-devices (second devices) 300a to 300n that can be detachably attached to the main device. The main device, whose concept is compared with the sub-devices, refers to the entire mobile terminal to which the sub-devices can be substantially coupled, but in an embodiment of the present invention, the main device may refer to one of a plurality of bodies constituting the mobile terminal which is coupled to the sub devices.

e.g., IPR2021-00335, Kim, Ex. 1010 at ¶ 181; see also, Petition, Paper No. 3 at 11, 18, 25, 56, 62, 64, 65

e.g., IPR2021-00335, Kim, Ex. 1010 at Fig. 7; see also, Petition, Paper No. 3 at 11

# Ground I – Obvious in view of Kim

# KIM TEACHES FIGURE A



## KIM TEACHES FIGURE A

**[0260]** 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 method of coupling the sub-device in an overlapping manner to the second body will now be described for the sake of brevity.

e.g., IPR2021-00336, Kim, Ex. 1010 at ¶260

*second body 100b*. EX1002, ¶¶81-84. Below is a schematic representation of such a mobile terminal. *Id.*, ¶87. For ease of reference, Petitioners refer to the embodiment below as “Figure A” throughout this Petition.

e.g., IPR2021-00336, Petition, Paper No. 3 at 22

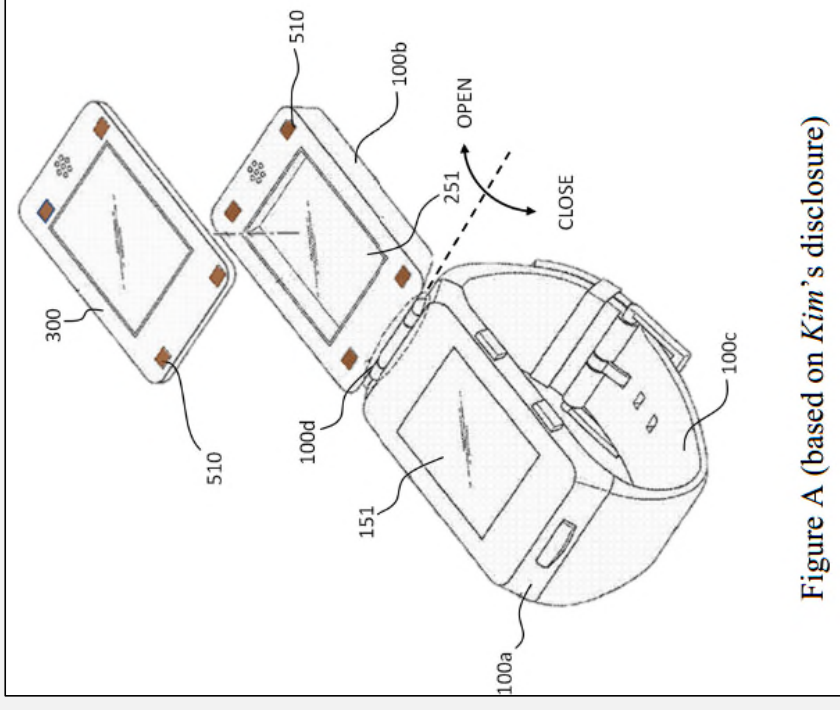


Figure A (based on Kim’s disclosure)

e.g., IPR2021-00336, Petition, Paper No. 3 at 22

## KIM TEACHES FIGURE A

### Board agreed in Institution Decision that Kim describes Figure A

As explained in the Petition, Kim describes an embodiment that a POSITA would have understood to resemble Petitioner's Figure A. Pet. 19–

Patent Owner argues that Petitioner's "interpretation of poorly worded paragraph 260 of Kim is flawed and at odds with the FIGs. 15B-D that paragraph 260 introduces" and that the "flawed interpretation of paragraph 260 is not enabled and lacks any reason to combine or reasonable expectation of success." Prelim. Resp. 46 n.6. We disagree with the contention that Petitioner has misinterpreted Kim. Moreover, to the extent

e.g., IPR2021-00336, Institution Decision, Paper No. 11 at 21; see also, IPR2021-00335, Institution Decision, Paper No. 11 at 21-22; IPR2021-00337, Institution Decision, Paper No. 11 at 22;

We find that Kim's above description supports an intent to modify Figure 15A by the addition of a sub-device in the manner shown in Figure 15B, and the sub-device can be added to the second body 100b—and this is consistent with Petitioner's assertions as manifested in the depiction of Figure A above. Ex. 1010 ¶¶ 255–261.

e.g., IPR2021-00338, Institution Decision, Paper No. 11 at 24

## POSITA WOULD HAVE CHOSEN APPROPRIATE HINGE

PO's expert agrees POSITA could have used "common sense" to choose best hinge

Q. You mentioned earlier that there are companies that make hinges and when somebody is trying to take a hinge, there are multiple options available to a person to pick from?

A. Your statement is basically true. There are various types of standard hinges that a person could go out and buy in a hardware store or similar type of commercial establishment that fall into various categories of hinge. And where one would use the different categories is going to depend on the application. An individual, in choosing such a hinge, would have to apply a great deal of common sense as to what type of hinge would work and which would not.

## KIM DOES NOT IMPOSE LIMITATIONS ON ITS HINGE AS PO CONTENTS

PO incorrect that hinge of watch-type embodiment must separate

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-

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 4

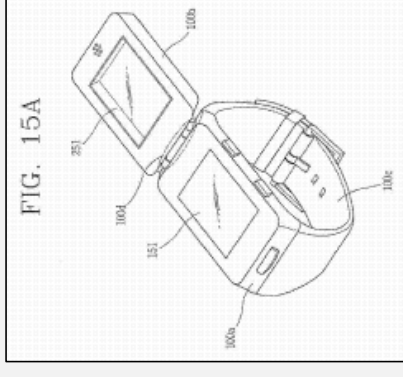
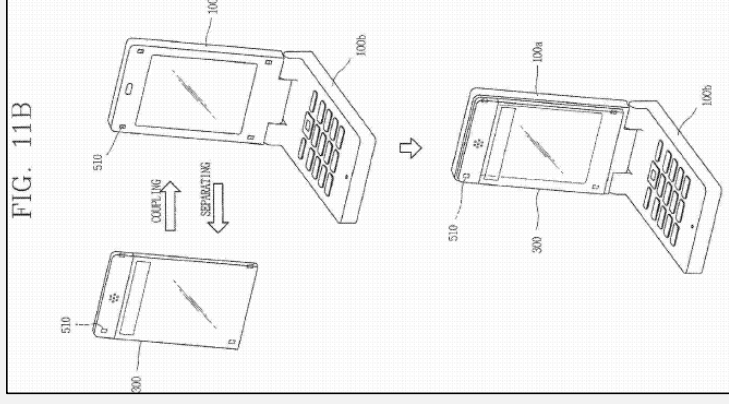
[0258] In this embodiment, one of the first and second bodies may operate as a main device or a sub-device. For example, the first body may operate as a main device and the second body may operate as a sub-device. Accordingly, the hinge 100d may be configured to allow coupling and separating the first body (i.e., the main device) and the second body (i.e., the sub-device). The hinge part 100d for coupling the sub-device must have a structure allowing coupling and separating.

e.g., IPR2021-00336, Kim, Ex. 1010 at ¶258

# KIM DOES NOT IMPOSE LIMITATIONS ON ITS HINGE AS PO CONTENDS

PO incorrect that Kim limits the hinge location

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 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



e.g., IPR2021-00336, Petitioners’ Reply, Paper No. 18 at 8-9

e.g., IPR2021-00336, Kim, Ex. 1010 at Figs. 11B, 15A

## FIGURE 15 EMBODIMENT NOT SHOWN WITH SINGLE HINGE MEMBER

PO argues Kim's watch-type embodiment disclosed with a single hinge

inappropriate to a POSITA. *Id.* For example, unlike the watch-type device of Fig. 15A, in which a single hinge is located on a side of the first body, EX1010, [0256], Kim's folder-type device of Fig. 11B has its first and second bodies coupled together by more than one hinge member. *Id.*, [0212]. Those hinge members are

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 10

### PO's expert contradicts PO

Q. Going back to Figure 15A and the hinge  
100D --  
A. Yes.  
Q. -- is that a single piece, multiple  
pieces? Can you describe what that hinge is made  
of?

THE WITNESS: As I said before, it's 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.

e.g., IPR2021-00336, Horenstein Transcript, Ex. 1031 at 81:16-82:7

## KIM TEACHES COMBINING EMBODIMENTS

PO incorrect that Kim contemplates combining only control methods

- Second sentence of ¶ 179 not limited to “control methods”
- Next 88 paragraphs describe physical aspects of embodiments before moving on to control methods
- Regardless, Dr. Kiaei explains why POSITA would have been motivated to combine Kim’s embodiments

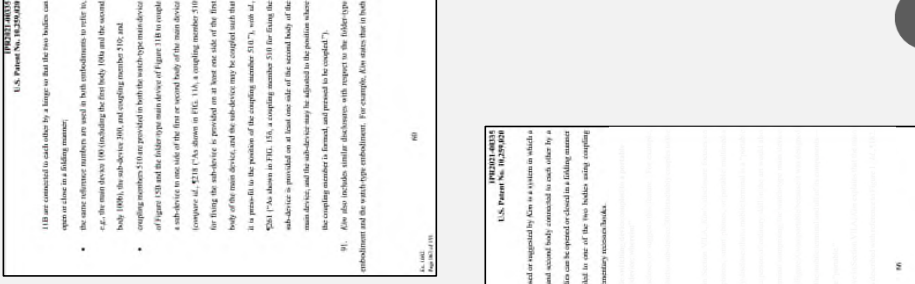
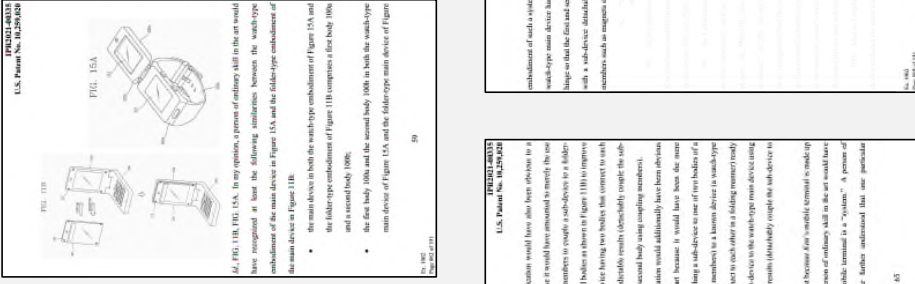
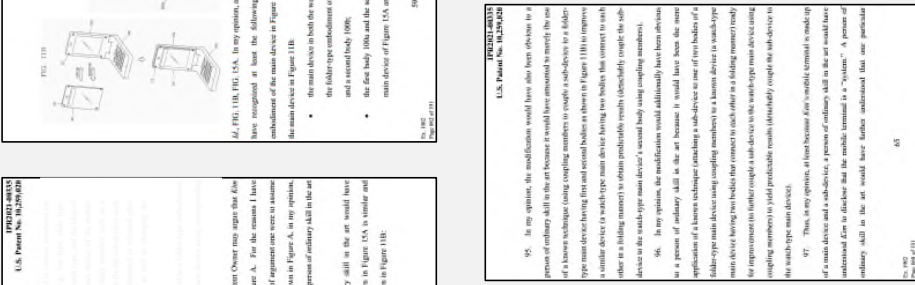
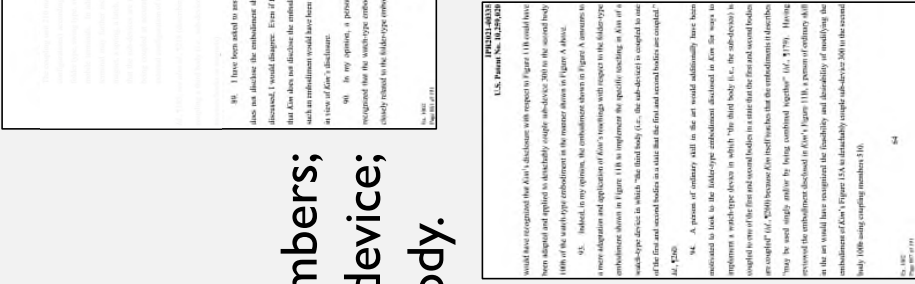
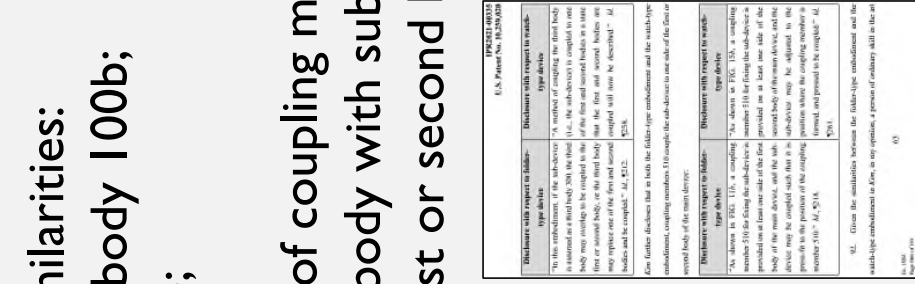
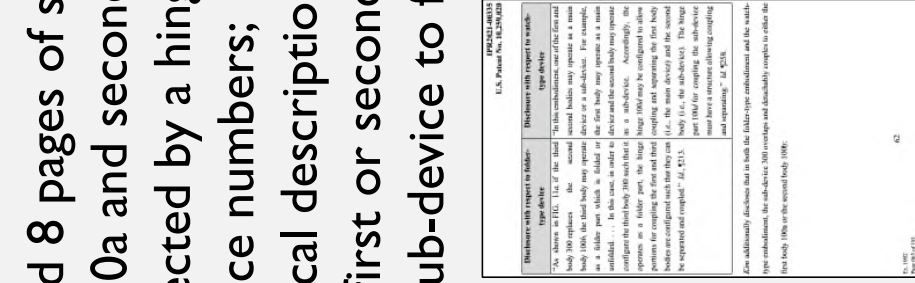
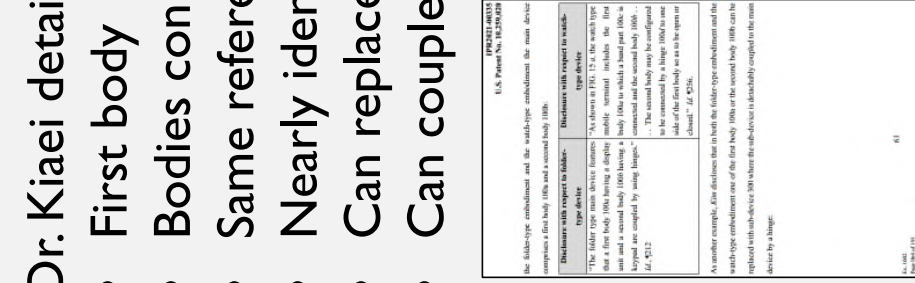
[0179] Embodiments for a control method in the mobile terminal 100 may now be described with reference to the accompanying drawings. Embodiments may be used singly and/or by being combined together. Embodiments may be implemented more easily when the display 151 includes the touchscreen.

e.g., IPR2021-00336, Kim, Ex. 1010 at ¶ 257

e.g., IPR2021-00336, Petitioner’s Reply, Paper No. 18 at 10-11

# KIM'S FOLDER AND WATCH TYPE DEVICES ARE SIMILAR

- Dr. Kiaei detailed 8 pages of similarities:
- First body 100a and second body 100b;
  - Bodies connected by a hinge;
  - Same reference numbers;
  - Nearly identical description of coupling members;
  - Can replace first or second body with sub-device;
  - Can couple sub-device to first or second body.





## KIM'S FOLDER TYPE EMBODIMENT OBVIOUS TO COMBINE WITH WATCH-TYPE EMBODIMENT

PO admits hinge depicted in Fig. 11B accommodates sub-device

watch-type embodiment of Fig. 15B. *Id.* Whereas the folder-type device of Fig. 11B can accommodate the placement of sub-device 300 between the first and second bodies, because the hinges connecting the first and second bodies are raised above a face of the second body 100b, the single, side-mounted hinge 100d of the

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 12

## KIM'S FOLDER TYPE EMBODIMENT OBVIOUS TO COMBINE WITH WATCH-TYPE EMBODIMENT

PO further claims folder-type embodiment not combinable because it cannot fully open

feature of that device. EX2004, ¶57. Having the hinge positioned on the side of the first body 100a in Fig. 15A allows for the full opening of the watch cover (second body 100b), and it thereby provides a useful, dual-display configuration for the device while allowing for full access to the display of first body 100a. *Id.* In contrast, the hinge arrangement of the folder-type device of Fig. 11 apparently would not permit such full opening, because Kim only shows the folder-type device with a partially open cover. *Id.* EX1010, Figs. 11A-E. While such an

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 15-16

Dr. Horenstien admitted hinge in Fig. 11B could open to 180°:

Q. Going back to Figure 11B, is it your opinion that the folder-type device shown in that figure cannot open beyond the 90-degree angle that is shown on the figure?

Depending on how that hinge arrangement was designed so as to prevent mechanical stress on the wiring, it's possible it opened to 180 degrees and it's

e.g., IPR2021-00336, Horenstein Transcript, Ex. 1031 at 79:8-80:6

## KIM'S FOLDER TYPE EMBODIMENT OBVIOUS TO COMBINE WITH WATCH-TYPE EMBODIMENT

PO further claims folder-type embodiment not combinable due to “dual display configuration” of watch-type

feature of that device. EX2004, ¶57. Having the hinge positioned on the side of the first body 100a in Fig. 15A allows for the full opening of the watch cover (second body 100b), and it thereby provides a useful, dual-display configuration for the device while allowing for full access to the display of first body 100a. *Id.* In contrast, the hinge arrangement of the folder-type device of Fig. 11 apparently would not permit such full opening, because Kim only shows the folder-type device with a partially open cover. *Id.* EX1010, Figs. 11A-E. While such an

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 15-16

Kim allows, but does not require a dual display for watch-type:

[0256] As shown in FIG. 15a, the watch type mobile terminal includes the first body 100a to which a band part 100c is connected and the second body 100b including a display unit and coupled to the first body and. The 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. The second body may be referred to as a cover, and the first body may include a display unit to configure a dual-display together with the display unit of the second body.

e.g., IPR2021-00336, Kim, Ex. 1010 at ¶ 256

## KIM'S FOLDER TYPE EMBODIMENT OBVIOUS TO COMBINE WITH WATCH-TYPE EMBODIMENT

PO further inconsistent because it contends hinge in Fig. 11B not combinable, but that Fig. 5 is informative

### D. Kim's Fig. 5 Shows How a Dual Display Device Would Be Fashioned.

Among the distinctions between Kim's Fig. 11 folder-type device and Fig. 15 watch-type device was the fact that the Fig. 11 folder-type device has as its base a keyboard. EX1010, [0212]; EX2004, ¶59. In contrast, the watch-type device may

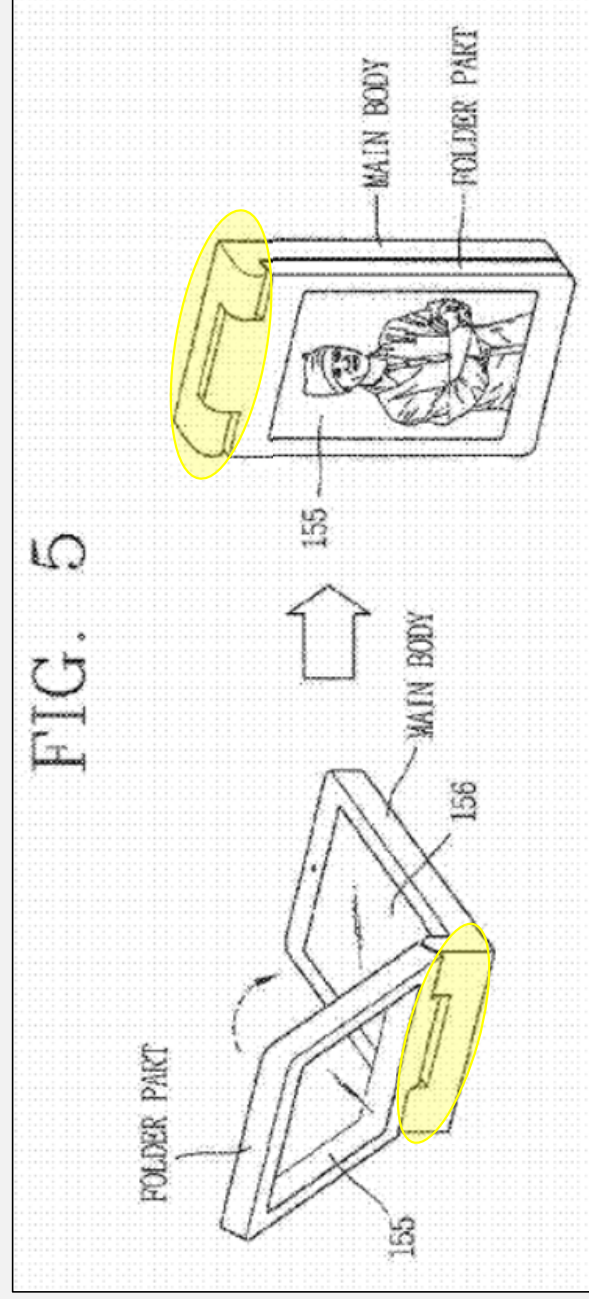
e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 27

Thus, if a POSITA were to have looked to Kim for guidance concerning the applicability of features of one device-type embodiment relative to those of another, the relevant teachings for the dual-display watch-type embodiment would have been derived, if at all, from Fig. 5, and would have suggested to the POSITA the

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 29

# KIM'S FOLDER TYPE EMBODIMENT OBVIOUS TO COMBINE WITH WATCH-TYPE EMBODIMENT

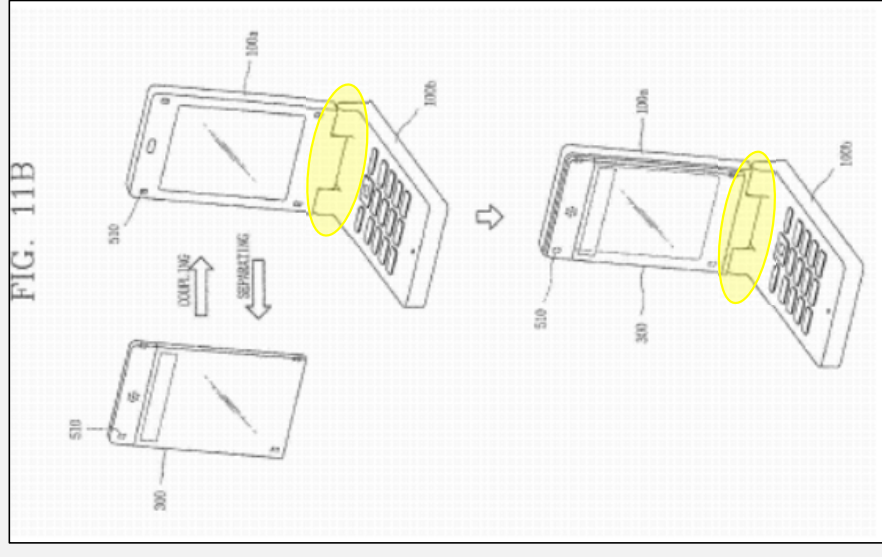
Fig. 5's hinge similar to Fig. 11B's hinge



e.g., IPR2021-00336, Kim, Ex. 1010 at Fig. 5

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).<sup>4</sup>

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 8



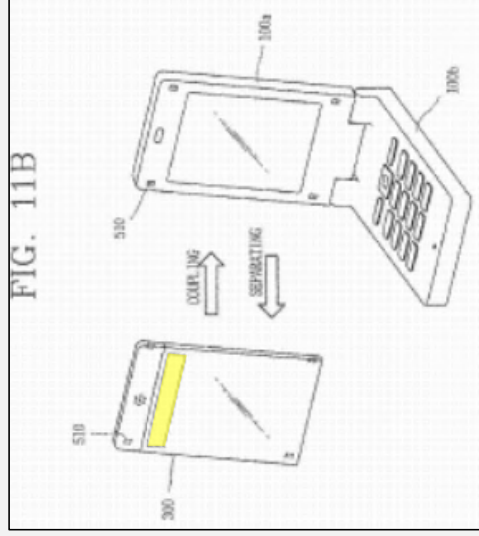
e.g., IPR2021-00336, Kim, Ex. 1010 at Fig. 11B

# I-2 LINE DISPLAY NO OBSTACLE TO COMBINING FOLDER AND WATCH-TYPE

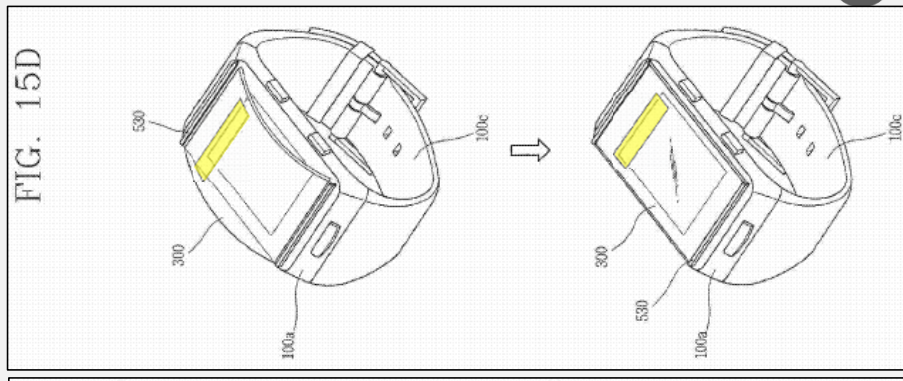
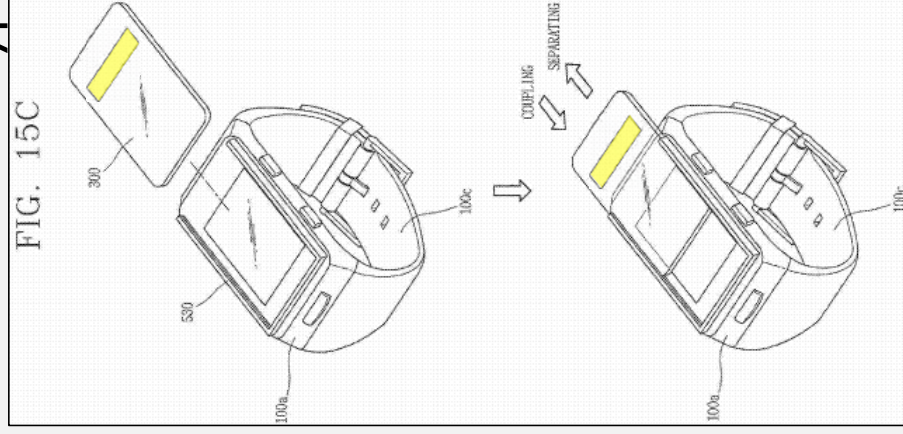
PO contradicted by Kim that 1-2 line display unsuitable for watch-type device

Considering that the watch-type device would need to be smaller than the folder-type device in order to be wearable, by the time the Fig. 11B sub-device 300 was downsized to be potentially compatible with the Fig. 15A watch-type device, its one-or-two line display would be so small as to be virtually unusable. *Id.* Petitioner's expert Dr. Kiaci

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 29



e.g., IPR2021-00336, Kim, Ex. 1010 at Figs. 11B



e.g., IPR2021-00336, Kim, Ex. 1010 at Figs. 15C, 15D

## KIM DOES NOT REQUIRE TOLED

### Many of PO's arguments are premised on notion that Kim requires a TOLED

Hence, unlike the Fig. 15A watch-type device, where both first and second bodies 100a and 100b employ displays, and a wearer may look through the TOLED cover 100b to see the underlying display on 100a, in the Fig. 11E folder-type device, no such look-through capacity need be accommodated; hence having a sub-device sandwiched between the cover and the base does not introduce the information display complications that would be present in a watch-type device. *Id.*

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 15

By applicable to the Fig. 15A watch-type embodiment (see Horenstein Fig. 13 below) By providing the look-through capability -- e.g., using a TOLED display -- in the watch cover 100b, and by using a touch control, a wearer could select an item displayed on the underlying display of first body 100a of the watch-type device. EX2004, ¶61. But, such an operation would be frustrated and indeed impossible a sub-device 300 were inserted between second body 100b and first body 100a of the watch-type device, as

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 28

In addition to the esthetic problems that would arise from such a gap, the see-through capability of the watch-type device would be impaired. EX2004, ¶64. For TOLED screen 251 of second body 100b to work properly relative to screen 151 of first body 100a, it must overlap screen 151 so that the two are essentially parallel. *Id.* That is

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 31

device. EX2004, ¶104. Therefore, if a POSITA were to combine the teachings of Kim and Koh (notwithstanding losing Kim's desirable top screen, i.e., TOLED arrangement for the watch-type device) the resulting arrangement would more

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 61

## KIM DOES NOT REQUIRE TOLED

### PO's expert agrees – TOLED optional

Question: In your view, does Kim disclose to a person of ordinary skill in the art that in its watch-type embodiment, the second body must have a TOLED.

Answer: So Kim allows for one of those -- for the second body to be a TOLED, but it does not require it.

[0257] At least one of the displays of the first body 100a and the second body 100b may be configured as a transparent display (TOLED). Each display may operate as a main display or a sub-display, and different information may be displayed on each display unit as the second body is open or closed. A touch pad or a transparent touch pad may be attached to at least one of the displays 151 and 251 of the first and second bodies.

e.g., IPR2021-00336, Kim, Ex. 1010 at ¶ 257

e.g., IPR2021-00336, Horenstein Transcript, Ex. 1031 at 653-16



## PO'S "OPERATING ISSUES" ARGUMENTS LEGALLY FLAWED

Speculation of inoperability does not defeat motivation to combine:

Our case law does not require that the Board explain exactly how the fixation elements of Koros physically incorporate into Branch's retractor. We agree with the Board that a skilled artisan would have recognized the stability and support the fixation element in Koros could add to the retractor assembly taught in Branch. NuVasive's expert testimony regarding the inoperability of the combination of Branch and Koros is mere speculation and conclusory. Accordingly, the Board's finding that a skilled artisan would have been motivated to combine Kossmann, Branch, and Koros is supported by substantial evidence.

*NuVasive, Inc., v. Iancu*, 752 F.App'x 985, 988 (Fed. Cir. 2018)

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 12, 15, 17

However, "it is not necessary that [Sukegawa and Lu] be physically combinable to render [a claim] obvious." That is so because "[t]he 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.'" Therefore, Elbrus's argument that combining Sukegawa and Lu could lead to an unworkable circuit is "basically irrelevant."

*Elbrus Int'l Ltd. v. Samsung Elecs. Co.*, 738 F.App'x 694, 698-99 (Fed. Cir. 2018) (citations omitted)

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 12, 18

## PO'S "OPERATING ISSUES" ARGUMENTS LEGALLY FLAWED

Despite understanding that a POSITA has ordinary creativity, PO's expert:

- Speculates as to easily solvable problems; or
- Does not explain why his alleged problems require beyond ordinary creativity to solve

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 12

As an initial matter, "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton," so the fact that it would take some creativity to carry out the combination does not defeat a finding of obviousness.

*Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1343 (Fed. Cir. 2020)

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 12, 15

art. The POSITA is not an automaton and may be able to combine the teachings of multiple patents or references employing ordinary creativity and common sense, and that familiar items may have obvious uses in another context or beyond their primary purposes. The POSITA faced with a problem is able to apply his or her experience and ability to solve the problem and also look to any available prior art to help solve the problem. I also recognize that it is not necessary to demonstrate a precise teaching directed to the specific subject matter of the challenged claim, for a fact finder can take account of the inferences and creative steps that a POSITA would employ. A patent that merely claims predictable uses of old elements

e.g., IPR2021-00336, Horenstein Declaration, Ex. 2004 at ¶ 24

# PO'S "OPERATING ISSUES" SOLVABLE THROUGH ORDINARY CREATIVITY

## Alleged issues

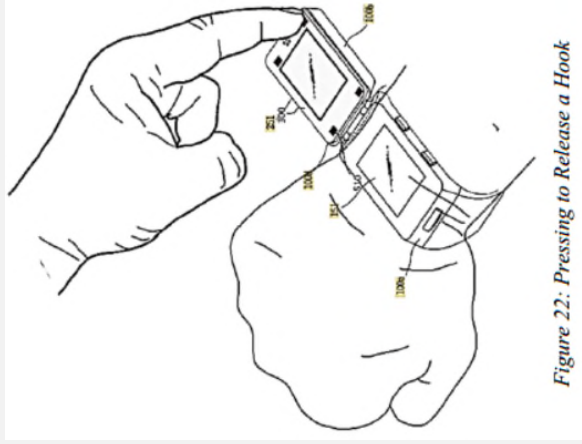


Figure 22: Pressing to Release a Hook

e.g., IPR2021-00336, Patent Owner's Response, Paper No. 15 at 47

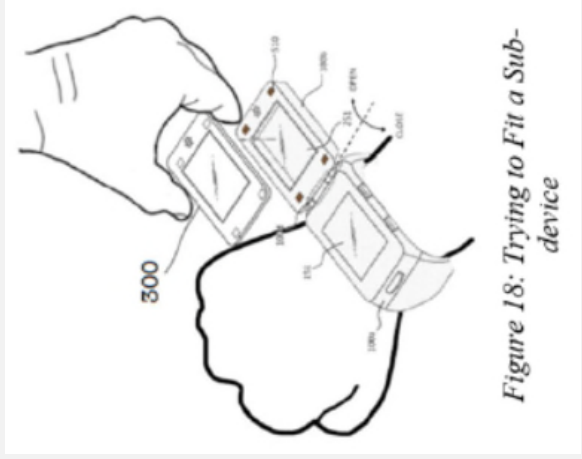


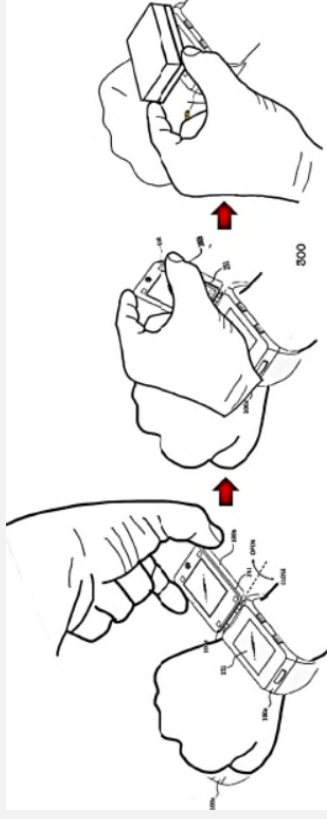
Figure 18: Trying to Fit a Sub-device

e.g., IPR2021-00336, Patent Owner's Response, Paper No. 15 at 35

## Ordinary Solutions:

- Calibrating coupling forces between main & sub-device
- Calibrating strength of hinge
- Decoupling sub-device from end proximal to hinge

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 12



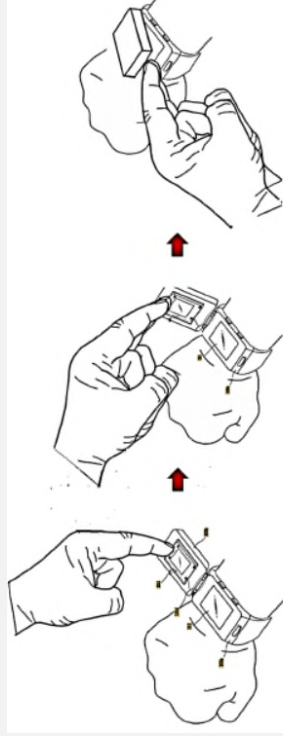
Horenstein Figure 19: Trying to Decouple a Sub-device With One Hand is

Difficult

e.g., IPR2021-00336, Patent Owner's Response, Paper No. 15 at 36

# PO'S "OPERATING ISSUES" SOLVABLE THROUGH ORDINARY CREATIVITY

## Alleged issues



*Horenstein Figure 23: Trying to Decouple a Sub-device from a Recess in the*

*Cover*

e.g., IPR2021-00336, Patent Owner's Response, Paper No. 15 at 56

## Ordinary Solutions:

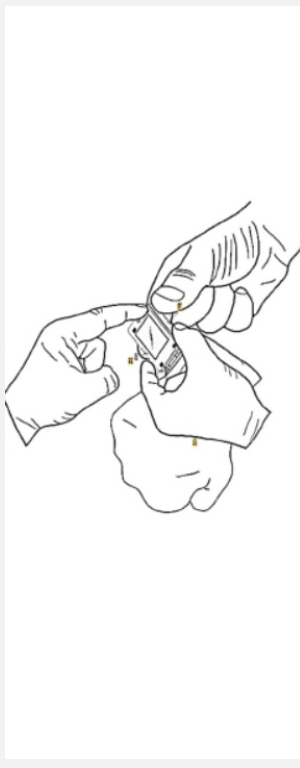
- Calibrating coupling forces between main & sub-device
- Calibrating strength of hinge
- Decoupling sub-device from end proximal to hinge

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 12



*Horenstein Figure 29: Trying to Remove the Headphones*

e.g., IPR2021-00336, Patent Owner's Response, Paper No. 15 at 67



*Horenstein Figure 22: It Takes Two To Use The Hook and Magnet Figure A*

*Embodiment*

e.g., IPR2021-00336, Patent Owner's Response, Paper No. 15 at 49

## KIM'S MAIN DEVICE PROTECTS ITS SUB-DEVICE

Kim's main device protects the sub-device from dislodging or damage

accurate positions.” *Id.*, ¶185. It is further supported by *Kim*'s disclosure that “[i]n addition, a cover may be provided to prevent the sub-device from being separated undesirably after it is coupled.” *Id.*, ¶193. Having reviewed the foregoing passage, a person of ordinary skill in the art would have recognized that when the sub-device 300 is coupled to the second body 100b of the watch-type embodiment shown in Figure A, and the second body 100b is folded to cover the first body 100a, the second body 100b's case encloses and protects the sub-device 300's case by preventing it from being moved, shattered, or released after being coupled.

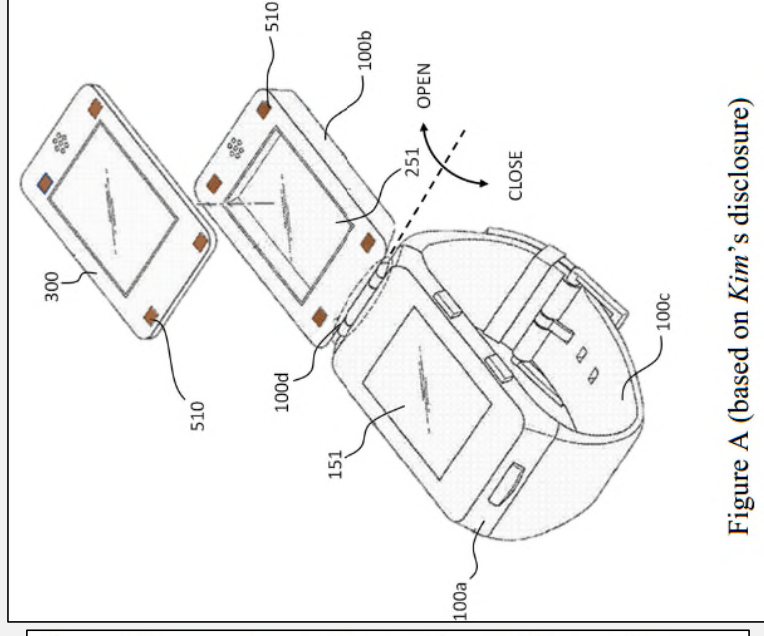


Figure A (based on *Kim*'s disclosure)

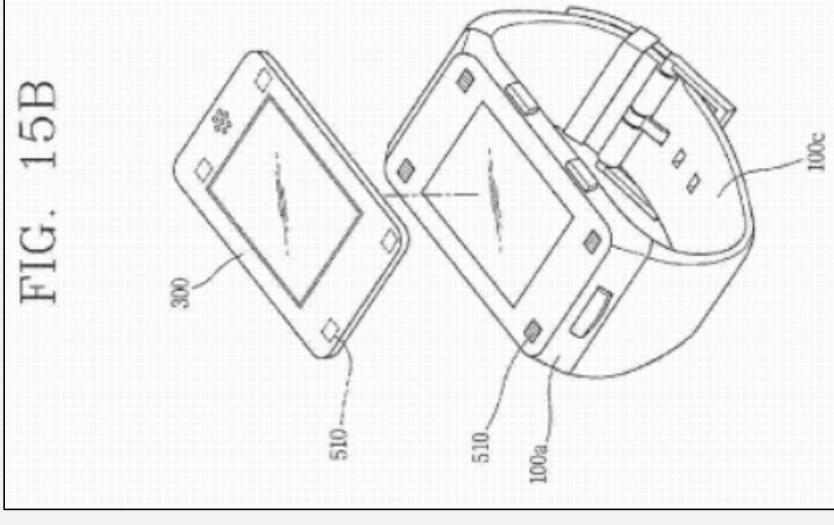
## KIM'S MAGNETS ARE "FULLY DISPOSED"

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.

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 14;

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.

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 14;



e.g., IPR2021-00336, Kim, Ex. 1010 at Fig. 15B

## IT WOULD HAVE BEEN OBVIOUS TO “FULLY DISPOSE” FIG. A MAGNETS

123. Indeed, a person of ordinary skill in the art would have recognized that making the magnets “fully” disposed within the sub-device (“electronic device”) was one of a limited number of available design choices—*i.e.*, fully disposed, not fully disposed, or external. In my opinion, a person of ordinary skill in the art would have been motivated to pursue these limited known options and would have recognized “fully” disposing the magnets within the sub-device as an acceptable solution. Indeed, the ’021 patent does not disclose any critical or unexpected results associated with having the magnets fully disposed within the electronic device.

# IT WOULD HAVE BEEN OBVIOUS TO “FULLY DISPOSE” FIG. A MAGNETS

## Fully disposing magnets need not be “preferred”

Petitioner contends there are limited choices when fitting magnets to such components, *see* EX1002, ¶123, but Petitioner does not adequately explain why the “fully disposed” option would be the one preferred by a POSITA, especially in

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 43

from the main device. EX1002, ¶124. Indeed, it was known to a POSITA to use this known technique (*i.e.*, fully disposing magnets within an electronic device) to create a flush interface between magnetically coupled components. EX1002, ¶¶125-126 (citing EX1015, ¶307).<sup>11</sup> Thus, making the magnets fully disposed within the

e.g., IPR2021-00336, Petition, Paper No. 3 at 34

This argument fails because our case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention. “[T]he question is whether there is something in the prior art as a whole to suggest the *desirability*, and thus the obviousness, of making the combination,” not whether there is something in the prior art as a whole to suggest that the combination is the *most desirable* combination available.

*In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004)

e.g., IPR2021-00336, Petitioners’ Reply, Paper No. 18 at 14



## PO SPECULATES OBSTACLES TO “FULLY DISPOSING” MAGNETS

- PO provides no evidence of alleged problems;
- Other POSITAs fully dispose magnets in similar devices without alleged problems

See also, e.g., IPR2021-00336, Kiaei Declaration, Ex. 1002 at ¶¶ 125-127

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.

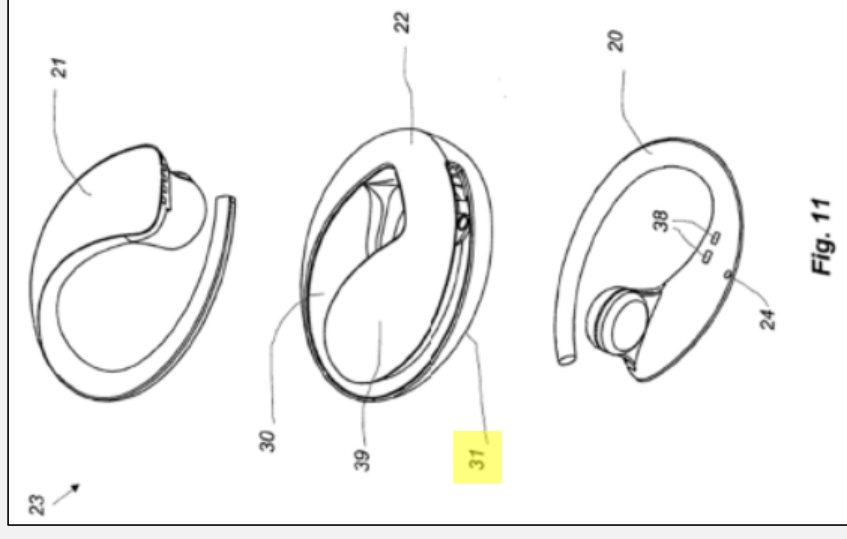
**EX1002, ¶¶125-127.**

e.g., IPR2021-00336, Petitioners’ Reply, Paper No. 18 at 15

## OBVIOUS TO USE BOTH MAGNETIC AND MECHANICAL COUPLING

POSITA would have looked to Birger for known technique of combining magnetic and mechanical attachments to provide a more secure coupling between main and sub-device

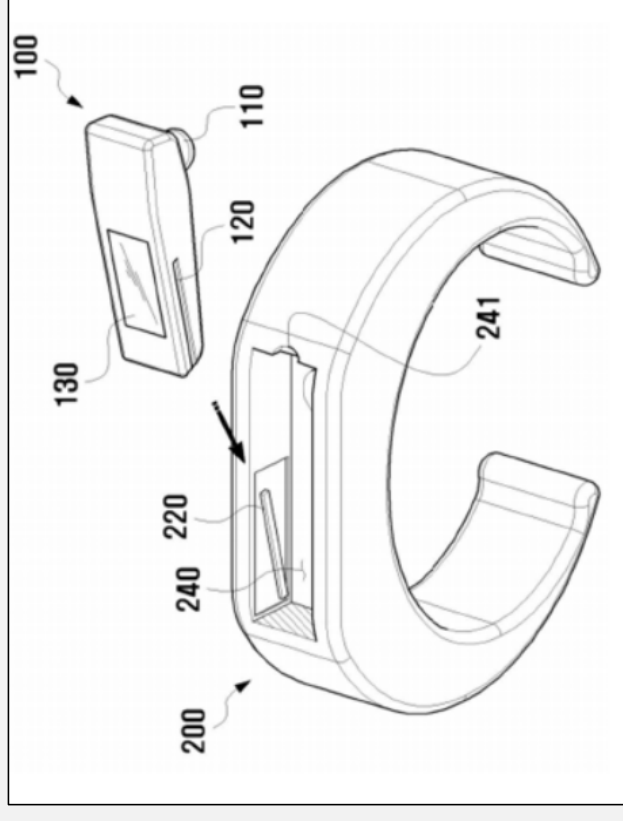
*Id.*, 10:26-11:2 (emphasis added). *Birger* further provides that: “The earphone [21] and the holding device [22] can be provided with *magnetic means* to hold the earphone *more firmly in the earphone receiving recess* [31].” *Id.*, 11:17-19 (emphases added). Accordingly, *Birger* demonstrates that it was a known technique at the time of the alleged invention of the '021 patent to use both magnetic and mechanical attachment techniques to achieve a more secure (yet still detachable) coupling between two devices in an electronic system.



## OBVIOUS TO USE BOTH MAGNETIC AND MECHANICAL COUPLING

POSITA would have looked to Koh for known technique of combining magnetic and mechanical attachments to provide a more secure coupling between main and sub-device

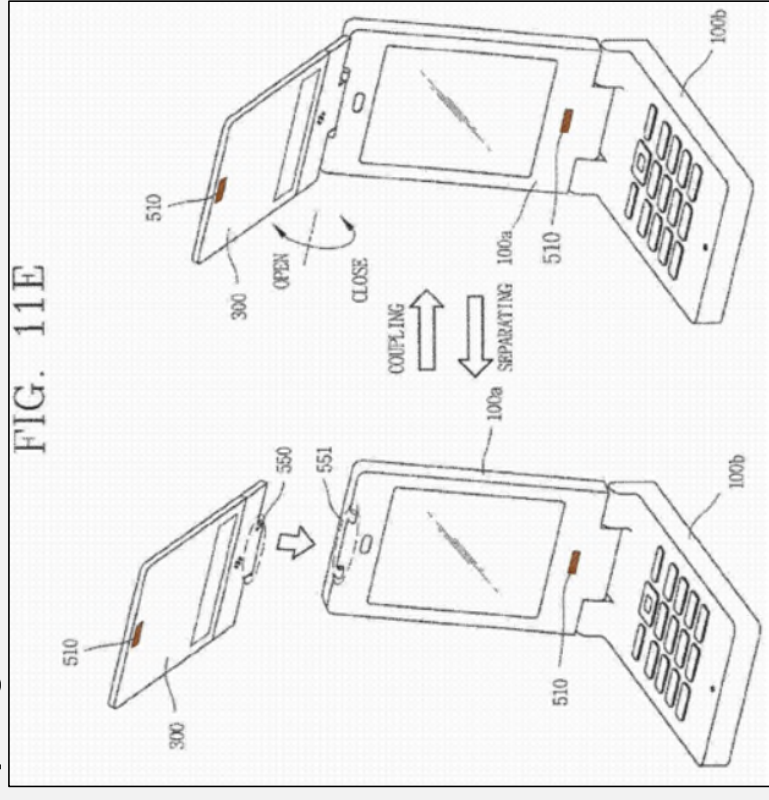
139. Thus, in my opinion, a person of ordinary skill in the art would also have recognized that *Koh* discloses using both the coupling protrusion 220 of storage unit 200 and the guide groove 120 of the wireless headset 100 *and* the magnet on the insertion surface of the wireless headset 100 and the magnet on the inner surface of the storage unit 240 to couple the wireless headset 100 to the storage unit 240. Accordingly, *Koh* too demonstrates that it was a known technique at the time of the alleged invention of the '021 patent to use both magnetic and mechanical attachment techniques to achieve a more secure (yet still detachable) coupling between two devices in an electronic system.



## OBVIOUS TO USE BOTH MAGNETIC AND MECHANICAL COUPLING

POSITA would have recognized use of known technique of combining magnetic and mechanical attachments to provide a more secure coupling between main and sub-device in Kim:

140. Indeed, *Kim* itself discloses incorporating multiple coupling techniques to connect a sub-device to a main device. For example, *Kim* discloses an embodiment with respect to Figure 11E (folder-type main device reproduced below) in which the sub-device is detachably coupled to the main device using both hinge part 550 and hinge part 551, as well as coupling members 510 (brown). I have reproduced Figure 11E below:



## OBVIOUS TO USE BOTH MAGNETIC AND MECHANICAL COUPLING

PO again speculates as to problems and assumes POSITA unable to address

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

## LID OF KIM'S MAIN DEVICE RECESSED TO CONFIGURE TO SUB-DEVICE

As explained above in Section VIII.A.1.a, *Kim* discloses or suggests a system comprising a sub-device 300 detachably coupled to the second body 100b of a watch-type main device using coupling members 510 (e.g., recesses/hooks). As also explained above in Section VIII.A.1.g, *Kim* discloses incorporating recesses into the second body 100b and hooks into the sub-device 300 to detachably couple the two. And for the reasons explained above in Section VIII.A.6, a POSITA would have understood the second body 100b in the embodiment shown in Figure A to be the “lid.” Accordingly, *Kim* discloses or suggests the second body 100b (“lid”) having recesses (“is recessed”) configured to engage with the hooks on the sub-device 300 (“to configure to the electronic device”). EX1002, ¶182.

e.g., IPR2021-00336, Petition, Paper No. 3 at 48-49

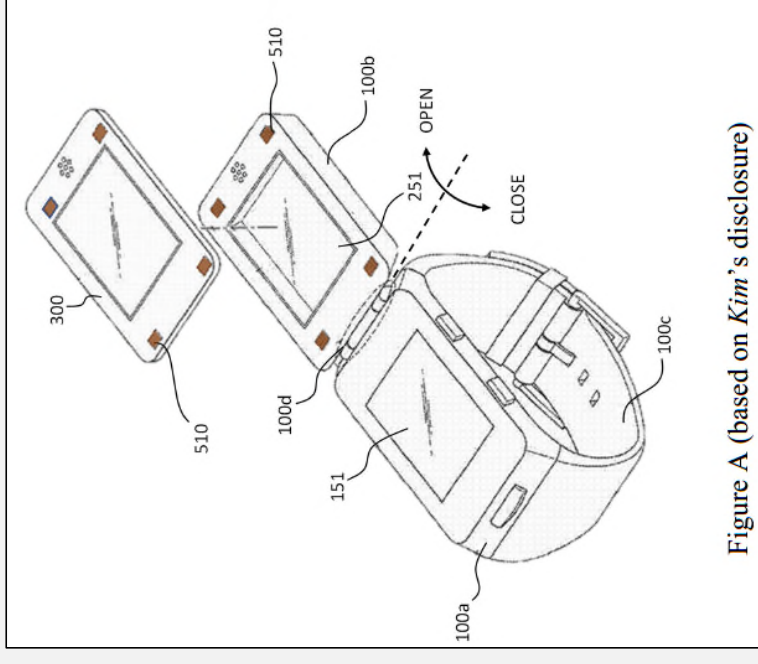


Figure A (based on *Kim*'s disclosure)

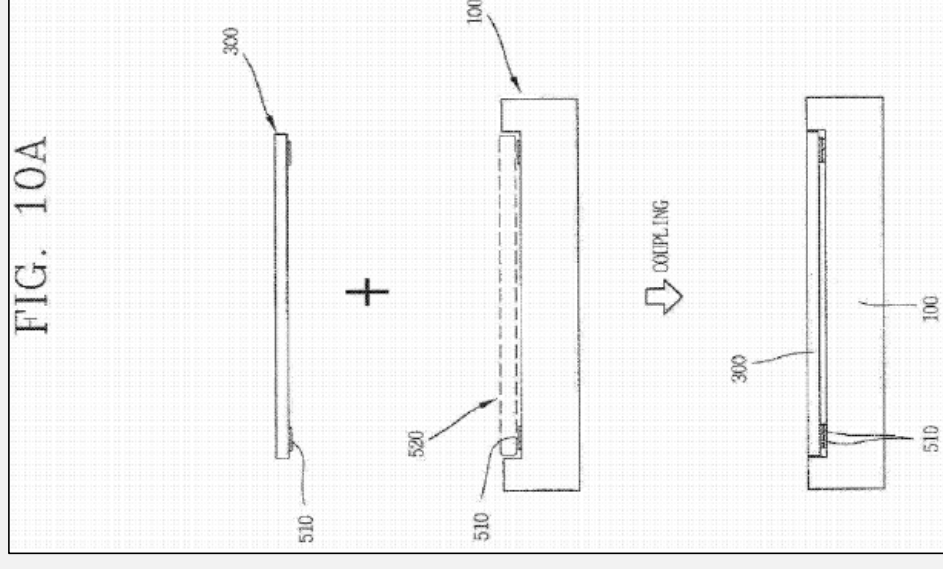
e.g., IPR2021-00336, Petition, Paper No. 3 at 47

## OBVIOUS TO RECESS LID OF MAIN DEVICE

184. In my opinion, it would have been obvious to a person of ordinary skill in the art to modify the second body 100b of the watch-type embodiment shown in Figure A to further include a recess that generally conforms to the shape of and receives the sub-device 300. A person of ordinary skill in the art would have been motivated to make this combination because it would result in a flush surface between the sub-device 300 and the second body 100b and also results in an overall thinner form factor when the sub-device 300 is coupled to the second body 100b.

185. A person of ordinary skill in the art would have recognized that the second body 100b and sub-device 300 of the watch-type embodiment shown above have the same general form factor as the main device body and sub-device shown in

Figure 10A. The combination would have amounted to mere use of a known

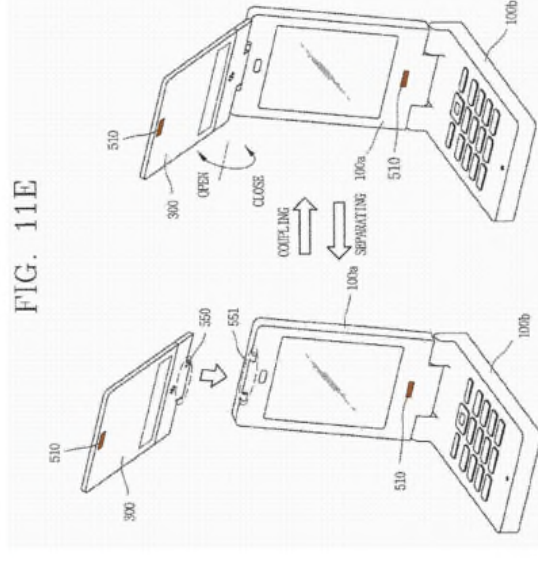


## OBVIOUS TO SECURE FIG. A LID CLOSED WITH MAGNET

In the watch-type embodiment shown in Figure A, it would have been obvious to a POSITA to use one or more of the magnets in the second body 100b to secure the second body 100b (“lid”) in a closed position with respect to the first body 100a. Doing so would have prevented the lid from unintentionally opening, for example, from movement of a user’s arm. EX1002, ¶189. Using one or more magnets in the lid of a folder-type portable electronic device to secure the lid in a closed position was a technique that was well-known to a POSITA. EX1002, ¶¶189-190 (citing, e.g., EX1021, ¶¶82, 88).<sup>17</sup>

e.g., IPR2021-00336, Petition, Paper No. 3 at 50

Kim itself also discloses this technique for securing a first body that is in a folding-type relationship to a second body. More particularly, Kim discloses (and illustrates in connection with Figure 11E) that when the sub-device is connected to the main device by hinges, “coupling members 510 may be additionally provided to prevent the [sub-device] from being moved after it is folded.” EX1010, ¶220; EX1002, ¶191.



EX1010, FIG. 11E.

e.g., IPR2021-00336, Petition, Paper No. 3 at 51



## OBVIOUS TO SECURE FIG. A LID CLOSED WITH MAGNET

Claim 9 ('020 & '021 patents) and claim 5 ('077 & '320 patents) does not require sub-device be coupled to main device when the “lid” is secured closed

- PO does not contest this

e.g., IPR2021-00338, Petitioner, Paper No. 3 at 54

PO's remaining arguments contrary to claim I plain language

- PO did not propound claim construction
- Plain language of claim I contemplates electronic device and switching device coupled or separated

e.g., IPR2021-00338, Petitioners' Reply, Paper No. 18 at 20-21

1. A system comprising:  
a portable switching device coupled to a portable electronic device;  
wherein:  
the switching device and the electronic device are configured to selectively couple to each other employing magnetic force;  
the switching device comprises a first case;  
the electronic device comprises a second case and an electronic circuit that is responsive to the switching device;  
a first magnet is fully disposed within the electronic device;  
the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
wherein the second case is decoupled from the first case by overcoming magnetic force the portable switching device is configured to activate, deactivate, or send into hibernation the portable electronic device;  
the electronic device plays or pauses a remote device; the switching device includes a lid and hinge attaching the lid to the switching device;  
the lid is recessed to configure to the electronic device; and  
when coupled, the first case functions to protect the second case.

IPR2021-00338, '320 patent, Ex. 1001 at 21:38-22:19

ARGUMENTS UNIQUE TO IPR2021-00335  
FOR THE '020 PATENT

## '020 PATENT MAPPING TO KIM

Requires, when coupled, the second case (electronic device) protect the first case (switching device):

- Main device = electronic device
- Sub-device = switching device

IPR2021-00335, Petition, Paper No. 3 at 41-43

I. A system comprising:  
a portable switching device coupled to a portable electronic device;  
wherein:  
the switching device and the electronic device are configured to selectively couple to each other employing magnetic force from a first magnet disposed within the switching device;  
the switching device comprises a first case;  
the electronic device comprises a second case and an electronic circuit that is responsive to the switching device;  
the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
the portable switching device is configured to activate, deactivate or send into hibernation the portable electronic device; and  
when coupled, the second case functions to protect the first case.

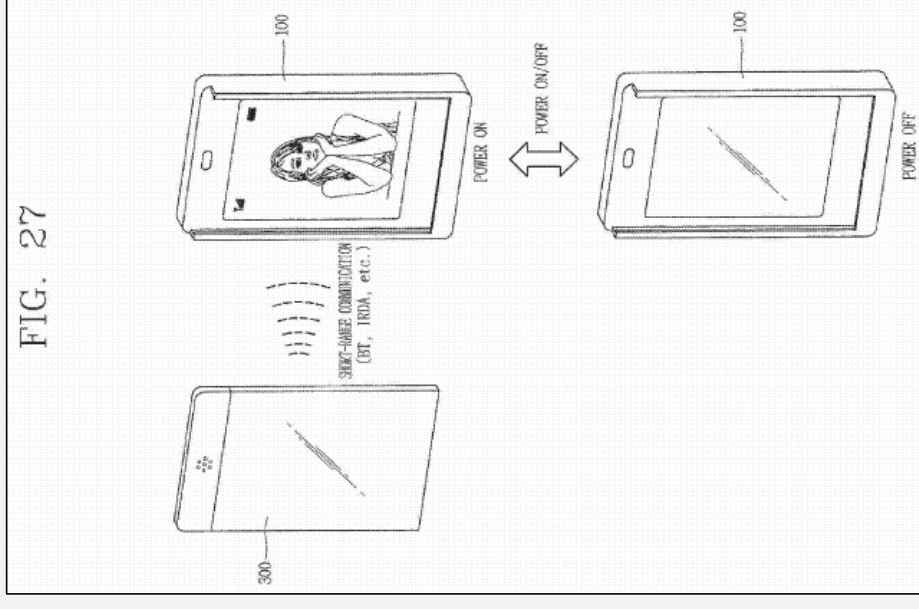
IPR2021-00335, '020 patent, Ex. 1001 at 21:28-22:2

## KIM'S SUB-DEVICE ACTIVATES & DEACTIVATES MAIN DEVICE

**[0316]** FIG. 27 illustrates controlling of power of the main device **100**.

**[0317]** In a state that the main device **100** and the sub-device **300** are separated, the user may manipulate only the sub-device **300** to turn on or off power of the main device **100**. To this end, the sub-device **300** may have a software key (or hardware key) for power controlling or execute a menu for power controlling.

e.g., IPR2021-00335, Kim, Ex. 1010 at ¶¶ 316-317; see also, Petition, Paper No. 3 at 16, 36, 41

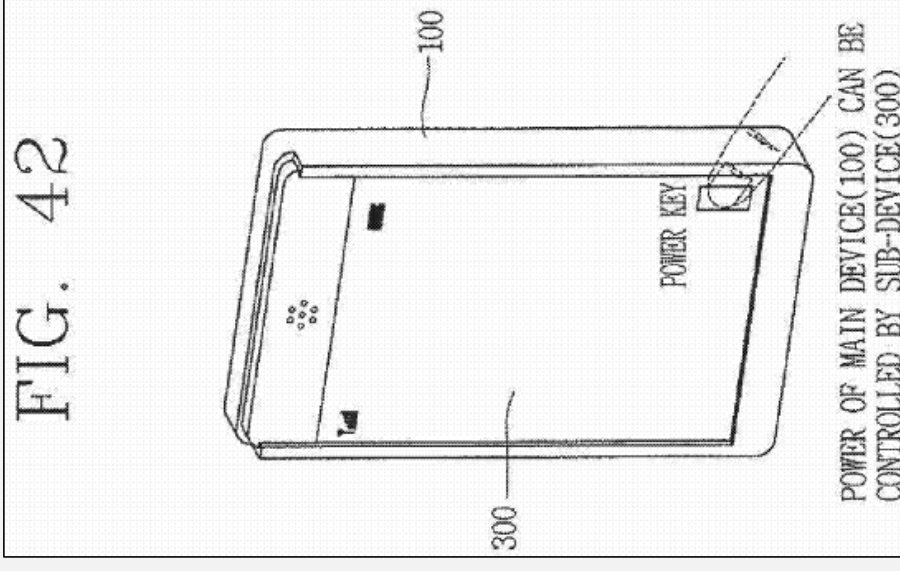


## KIM'S SUB-DEVICE CONTROLS MAIN DEVICE'S POWER

**[0416]** FIG. 42 illustrates controlling of power of the terminal.

**[0417]** In this embodiment, when the main device 100 and the sub-device 300 are coupled, power of the main device 100 may be turned on or off by using a power key (e.g., hardware or software key) 426 provided at the sub-device.

e.g., IPR2021-00335, Kim, Ex. 1010 at ¶¶ 416-417; see also, Petition, Paper No. 3 at 16, 36, 41

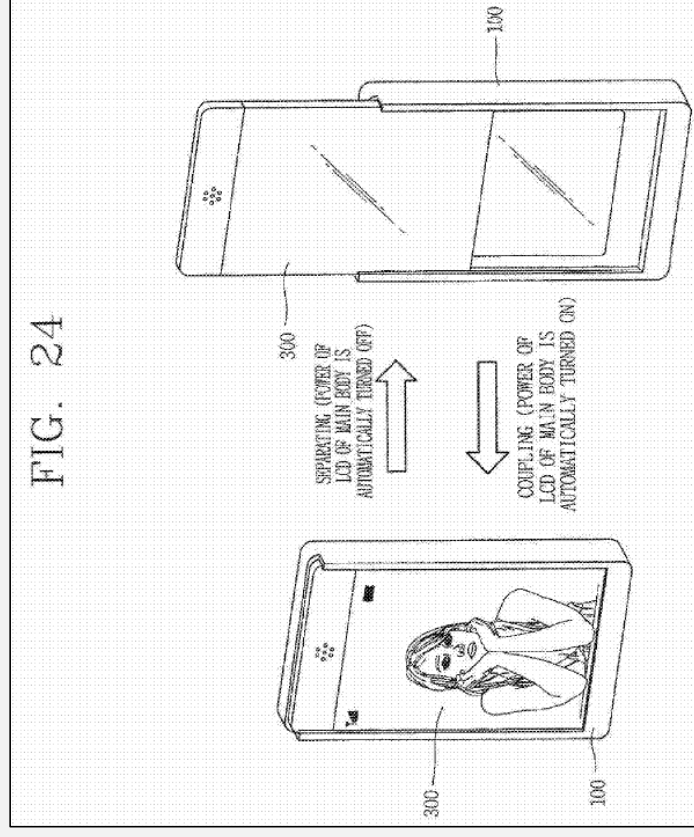


e.g., IPR2021-00335, Kim, Ex. 1010 at Fig. 42; see also, Petition, Paper No. 3 at 16, 36, 41

## KIM'S SUB-DEVICE ACTIVATES & DEACTIVATES MAIN DEVICE

**[0300]** In this embodiment, the controller 180 detects the coupling and separating (i.e. coupling or de-coupling) of the two devices 100 and 300 and controls the power supply to the display of the main device 100 to turn it on or off.

e.g., IPR2021-00335, Kim, Ex. 1010 at ¶ 300; see also, Petition, Paper No. 3 at 35, 41



e.g., IPR2021-00335, Kim, Ex. 1010 at Fig. 24; see also, Petition, Paper No. 3 at 35, 41

## KIM'S SUB-DEVICE ACTIVATES & DEACTIVATES MAIN DEVICE

PO's unsupported attorney argument does not address grounds in petition

Petitioner fails to explain any disclosure or suggestion in Kim of the watch shaped main device 100a/100b in Fig. 15A (relied upon by Petitioner's fictional Fig. A to be the "switching device" of claim 1) being configured to activate, deactivate or hibernate a sub-device 300.

IPR2021-00335, Patent Owner Response, Paper No. 15 at 49

PO argues that Petitioners failed to explain how Kim's watch-type main device activates, deactivates or hibernates the sub-device.<sup>6</sup> POR, 49-52. That is true, but only because Petitioners actually argued that Kim discloses or suggests the *sub-device* activates, deactivates or hibernates the *watch-type main device*. Petition, 40-41; EX1002, ¶¶144-151. Having failed to engage with Petitioners' *actual argument*, PO has conceded the point. To the extent that PO makes any arguments about Kim's

IPR2021-00335, Petitioners' Reply, Paper No. 17 at 18

## KIM'S SUB-DEVICE ACTIVATES & DEACTIVATES MAIN DEVICE

PO advances unsupported attorney argument that control method not applicable to watch-type:

As a threshold matter, as noted above, 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 devices, Pet., 15, n. 19, is unwarranted. It is not applicable. For example, the constraint of being wrist mounted means that one holds up a watch in a single (portrait) orientation for viewing.

IPR2021-00335, Patent Owner Response, Paper No. 15 at 50

And is contradicted by its own expert:

Kim does explain that various "control methods" for the different mobile terminals "may be used singly, or by being combined together," Ex. 1010 at [0179], but this

IPR2021-00335, Horenstein Declaration, Ex. 2004 at ¶ 39



ARGUMENTS UNIQUE TO  
IPR2021-00336, -00337, AND -00338  
FOR THE '021, '077, AND '320 PATENTS

## '021, '077, & '320 PATENT MAPPING TO KIM

Requires, when coupled, the first case (switching device) protect the second case (electronic device) :

- Main device = switching device
- Sub-device = electronic device

e.g., IPR2021-003336, Petition, Paper No. 3 at 43-44

I. A system comprising:  
a portable switching device coupled to a portable electronic device;  
wherein:  
the switching device and the electronic device are configured to selectively couple to each other employing magnetic force;  
the **switching device** comprises a **first case**;  
the **electronic device** comprises a **second case** and an electronic circuit that is responsive to the switching device;  
a **first magnet is fully disposed within the electronic device**;  
the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
the portable switching device is configured to activate, deactivate or send into hibernation the portable electronic device; and  
when coupled, the **first case** functions to protect the **second case**.

IPR2021-003336, '021 patent, Ex. 1001 at 21:38-22:7

## KIM'S MAIN DEVICE ACTIVATES & DEACTIVATES SUB-DEVICE

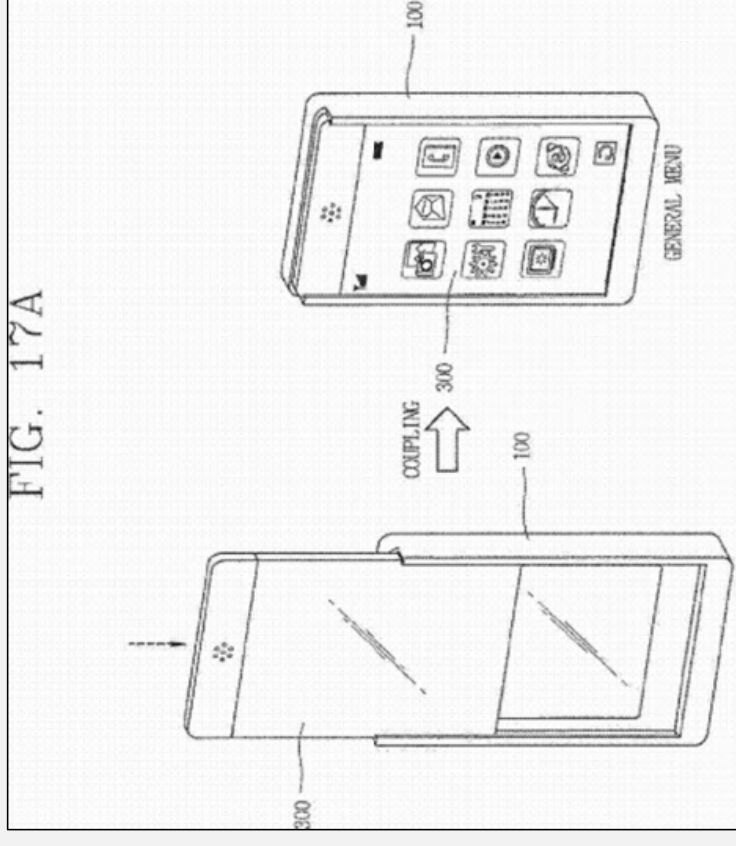
[0270] The control method in coupling/separating the mobile terminal according to an embodiment of the present invention relates to a method for controlling an operation and state of the main device 100 and the sub-device 300 when the sub-device 300 is coupled to the main device 100 of the mobile terminal or separated from the main device 100.

e.g., IPR2021-00336, Kim, Ex. 1010 at ¶ 270; see also, Kiaei Declaration, Ex. 1002 at ¶ 60.

A POSITA would have recognized from the figure above that prior to coupling (as shown on the left) the sub-device is inactive (e.g., its display is shown to be off), and after coupling a menu is displayed. EX1002, ¶¶145, 147. A POSITA would have understood that in implementations in which the sub-device's display is non-transparent—which Kim discloses as acceptable (EX1002, ¶148)—the controller 180 would necessarily display the menu shown on the right on the sub-device's display, which would have required activating the sub-device (e.g., turning on its display). Accordingly, Kim discloses the main device's controller 180

e.g., IPR2021-00336, Petition, Paper No. 3 at 40

FIG. 17A



e.g., IPR2021-00336, Kim, Ex. 1010 at Fig. 17A

## OBVIOUS TO MODIFY KIM'S MAIN DEVICE TO ACTIVATE & DEACTIVATE SUB-DEVICE

If sub-device not activated in Fig. 17A, obvious to do so

- Obvious to modify main device to activate or deactivate sub-device
- Kim teaches sub device activating and deactivating main device
  - Kim teaches main and sub-device can have same components

See also, e.g., IPR2021-00336, Petition, Paper No. 3 at 42

(EX1010, ¶¶274-276), and it would have been obvious to a POSITA to have the controller activate the sub-device and its display because it was one of two choices available to a POSITA to display the menu shown on Figure 17A—*i.e.*, activate the sub-device and its display or activate the main device display. EX1002, ¶151; KSR

e.g., IPR2021-00336, Petition, Paper No. 3 at 41

A POSITA would have been motivated to make the modification because it would have allowed the user to have additional flexibility to control the sub-device and would have been consistent with *Kim*'s teachings to have the main device control the state and/or operation of the sub-device. EX1002, ¶¶156-158. And because *Kim* discloses the sub-device having a small battery or no battery at all (EX1010, ¶186), a POSITA would have been motivated to modify the main device to remotely and conveniently turn off the sub-device in order to conserve its limited power in instances when it is decoupled and not being used (EX1002, ¶156).

e.g., IPR2021-00336, Petition, Paper No. 3 at 41-42

## KIM'S MAIN DEVICE ACTIVATES & DEACTIVATES SUB-DEVICE

PO again advances unsupported attorney argument that control method not applicable to watch-type:

As a threshold matter, as noted above, 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 devices, Pet., 40, n. 13, is unwarranted. It is not applicable. For example, the constraint of

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 50-51

And is again contradicted by its own expert:

discussions. This makes sense, and a POSITA would have recognized that Kim already explained that the control methods "may be used singly and/or by being combined together," *id.* at [0179]; hence there would be no need to describe each control method in the context of each device type. Instead, the single device-type description is sufficient, and the different control methods would have been understood by the POSITA to be potentially applicable to others of the device-types. Thus, I disagree with Dr. Kiaei that a POSITA would have understood Kim

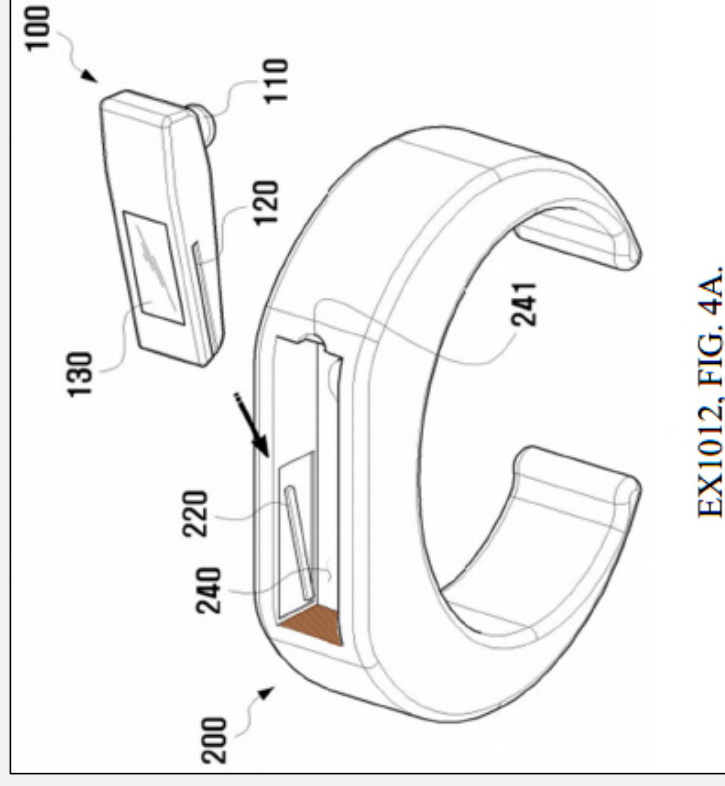
e.g., IPR2021-00336, Horenstein Declaration , Ex. 2004 at ¶ 40

## Ground 2 – Obvious in view of Kim & Koh

## KOH

*Koh* discloses “a portable electronic device module that is easy to couple and convenient to store by sliding and coupling a portable electronic device to an electronic device storage unit.” EX1012, ¶12. In one embodiment, *Koh* describes the “portable electronic device module” as a wireless headset (*id.*, ¶27), using Bluetooth (*id.*, ¶29), and that the “electronic device storage unit 200 comprises a fastening unit to be worn on a user’s wrist” (*id.*, ¶36). Figure 4A, reproduced below, shows the wireless headset 100 as it is to be coupled into the storage unit 200:

e.g., IPR2021-00336, Petition, Paper No. 3 at 58



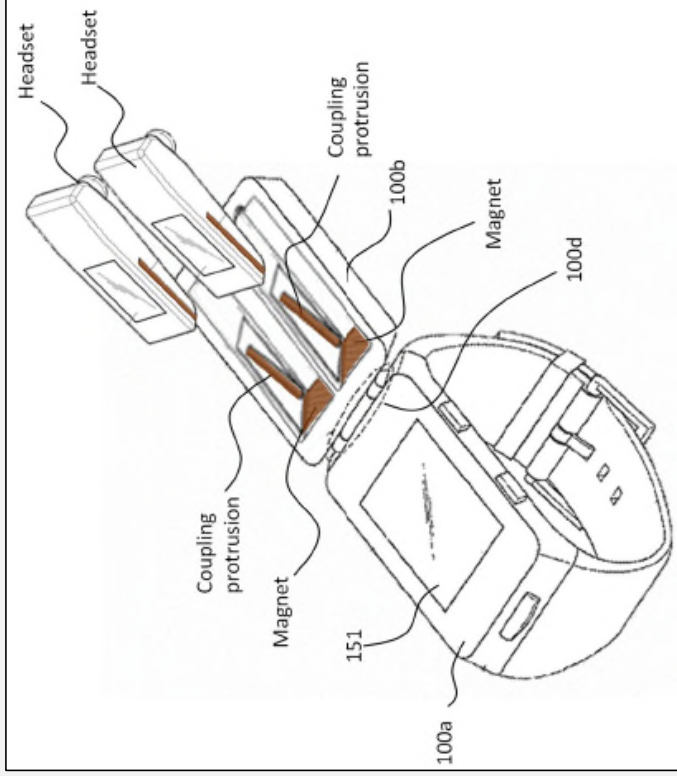
EX1012, FIG. 4A.

e.g., IPR2021-00336, Petition, Paper No. 3 at 59

# MOTIVATION TO COMBINE KIM + KOH

## Koh combined for teaching of detachably coupling headset to watch-type device

e.g., IPR2021-00336, Petition, Paper No. 3 at 62



e.g., IPR2021-00336, Petition, Paper No. 3 at 60-61

*Kim* further discloses configuring sub-device 300 (“electronic device”) “in one of various forms such as ... [an] ear phone” and that “in this case, the coupling unit 210 of the main device may be configured to have a structure (or shape) that can attach the sub-device 300 to the interior of [sic] the exterior of the main device.” *Id.*, ¶¶194, 445 (“[T]he second body 300 may be used as a Bluetooth headset.”); *see also id.*, ¶266; EX1002, ¶214-216. Finally, *Kim* discloses detachably coupling one or more sub-devices to the main device. EX1010, ¶181.

e.g., IPR2021-00336, Petition, Paper No. 3 at 57-58

EX1002, ¶¶217-218. *Kim*, however, does not include a discussion of example techniques for coupling wireless earphone/headset sub-devices with a watch-type device.

e.g., IPR2021-00336, Petition, Paper No. 3 at 58



## PO MISUNDERSTANDS KIM-KOH COMBINATION

Kim-Koh combination would retain functionality taught by Kim

The manner in which *Kim*'s main device controls the state and/or operation of the sub-device is not dependent on the specific form factor of the main device or the sub-device. A POSITA would have understood that in the *Kim-Koh* system, the watch-type main device would continue to control the state and/or operation of the wireless earphone/headset sub-device in the same manner as discussed above. EX1002, ¶226; see *supra* Sections VIII.A.1.b and VIII.A.1.h (discussing the main device controlling the state and/or operation of the sub-device).

e.g., IPR2021-00336, Petitioner, Paper No. 3 at 61-62

The manner in which *Kim*'s sub-device controls the state and/or operation of the main device is not dependent on the specific form factor of the main device or the sub-device. A POSITA would have understood that in the *Kim-Koh* system, the

IPR2021-00335, Petitioner, Paper No. 3 at 60

## PO ADMITS MOTIVATION TO COMBINE KIM AND KOH

type device. EX2004, ¶104. Therefore, if a POSITA were to combine the teachings

of Kim and Koh (notwithstanding losing Kim’s desirable top screen, i.e., TOLED arrangement for the watch-type device) the resulting arrangement would more plausibly adopt such a configuration and, consequently, would not be one in which “when coupled, the first case functions to protect the second case,” as required by claim 1. *Id.* Instead, as illustrated in Horenstein Figure 25 (see EX2004, ¶104), it would more plausibly be an arrangement in which the wireless headset(s) of Koh would be inserted into a cavity or recess in the top of cover 100b of the watch-type device of Kim.

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 61-62

This arrangement, in which the wireless earphones of Koh would be located on the top-side (or outside) of the second body of Kim’s watch-type embodiment, is the one that a POSITA would have more likely envisioned, rather than the one

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 62

“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.”); *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004) (holding that “a particular combination” need not “be the preferred, or the most desirable, combination described in the prior art in order to provide motivation”).

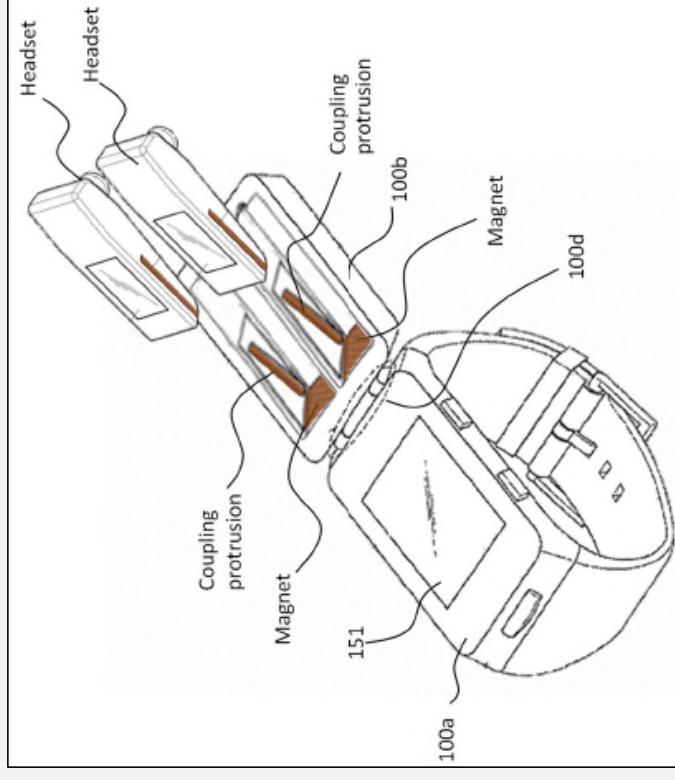
*Gen. Elec. Co. v. Raytheon Techs. Corp.*, 983 F.3d 1334, 1351 (Fed. Cir. 2020)

e.g., IPR2021-00336, Patent Owner Response, Paper No. 15 at 21-22

## PO MISUNDERSTANDS KIM-KOH COMBINATION

The “complementary surface elements” limitation is met by grooves/protrusions

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.**



e.g., IPR2021-00336, Petitioners’ Reply, Paper No. 18 at 22

e.g., IPR2021-00336, Petition, Paper No. 3 at 60-61

## PO ADVANCES SIMILAR LEGALLY AND FACTUALLY DEFICIENT OPERATIVITY ISSUES FOR KIM-KOH COMBINATION

In addition to ordinary creativity of POSITA (see ground I), Koh further teaches decoupling headset which would pre-empt PO's speculative operativity issues

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.

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 23

<47> To separate the wireless headset 100 from the electronic device storage unit 200, a small groove 241 may be formed in a predetermined portion of the storage unit 240 of the electronic device storage unit 200. The user can lift and take out the wireless headset 100 through the small groove 241. Alternatively, by using the elasticity of the spring connected to the coupling protrusion 220, the wireless headset may be taken out by pressing one end of the wireless headset 100.

e.g., IPR2021-00336, Ex. 1012 at ¶ 47

ARGUMENTS UNIQUE TO  
IPR2021-00337, AND -00338  
FOR THE '077 AND '320 PATENTS

# '077 AND '320 PATENTS RECITE PLAYING/PAUSING "REMOTE DEVICE"

## '077 Patent

I. A system comprising:  
a portable switching device coupled to a portable electronic device;  
wherein:  
the switching device and the electronic device are configured to selectively couple to each other employing magnetic force;  
the switching device comprises a first case;  
the electronic device comprises a second case and an electronic circuit that is responsive to the switching device;  
a first magnet is fully disposed within the electronic device;  
the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
the portable switching device is configured to activate, deactivate, or send into hibernation the portable electronic device;  
the electronic device plays, pauses and/or changes the volume of a remote device;  
the switching device includes a lid and hinge attaching the lid to the switching device;  
the lid is recessed to configure to the electronic device; and  
when coupled, the first case functions to protect the second case.

IPR2021-00337, '077 patent, Ex. 1001 at 21:38-22:19

## '320 Patent

I. A system comprising:  
a portable switching device coupled to a portable electronic device;  
wherein:  
the switching device and the electronic device are configured to selectively couple to each other employing magnetic force;  
the switching device comprises a first case;  
the electronic device comprises a second case and an electronic circuit that is responsive to the switching device;  
a first magnet is fully disposed within the electronic device;  
the electronic device comprises at least one element selected from the group consisting of beveled edges, ridges, recessed areas, grooves, slots, indented shapes, bumps, raised shapes, and combinations thereof; configured to correspond to complimentary surface elements on the switching device;  
wherein the second case is decoupled from the first case by overcoming magnetic force the portable switching device is configured to activate, deactivate, or send into hibernation the portable electronic device;  
the electronic device plays or pauses a remote device;  
the switching device includes a lid and hinge attaching the lid to the switching device;  
the lid is recessed to configure to the electronic device; and  
when coupled, the first case functions to protect the second case.

IPR2021-00338, '320 patent, Ex. 1001 at 21:38-22:19

## KIM + KOH COMBINATION PLAYS/PAUSES A “REMOTE DEVICE”

sub-device. EX1002, ¶221. A POSITA would have understood that in the *Kim-Koh* system, the watch-type main device would continue to control the state and/or operation of the wireless earphone/headset sub-device in the same manner as discussed above. *Id.*; see *supra* Sections VIII.A.1.b and VIII.A.1.i (discussing the main device controlling the state and/or operation of the sub-device). A POSITA would have further known that Bluetooth headsets are capable of controlling media on a remote device, and would have found it obvious to incorporate such functionality into the *Kim-Koh* headset because *Kim* states that the sub-device can “execute music files or video files of the personal computer through a touch input via the sub-device.” EX1010, ¶344; EX1002, ¶¶222-227 (citing, e.g., EX1029, 9

e.g., IPR2021-00338, Petition, Paper No. 3 at 62-63

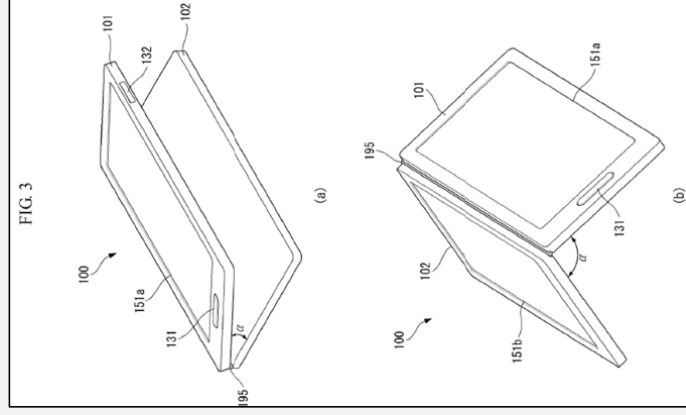
# Ground 3 – Obvious in view of Kim & Lee



## LEE

Lee discloses similar mobile terminal with two bodies in a folding form factor and a sensing unit implemented using a Hall sensor

e.g., IPR2021-00336, Petition, Paper No. 3 at 65



**[10079]** The sensing unit 140 can include at least one of a hall sensor, 3-axis or 6-axis motion sensor, terrestrial magnetic sensor and acceleration sensor in order to sense the position or direction of the mobile terminal 100.

e.g., IPR2021-00336, Lee, Ex. 1013 at ¶79

**[10119]** The sensing unit 140 of the mobile terminal 100 includes a plurality of sensor pairs capable of respectively sensing the closed state, half open state and fully open state. Each of the sensor pairs includes a sensed element and a sensing element. The sensing element senses whether the sensed element is close to the sensing element and a distance between the sensed element and the sensing element through a variation in electrical properties, such as resistance, capacitance, inductance, etc. when the distance between the sensed element and the sensing element varies. The sensed element

e.g., IPR2021-00336, Lee, Ex. 1013 at ¶119

e.g., IPR2021-00336, Lee, Ex. 1013 at Fig. 3; see also, Kiaei Declaration, Ex. 1002 at ¶237

## KIM – LEE COMBINATION

Kim teaches detecting coupling status  
but does not provide details

POSITA would have been motivated to  
look to similar art for additional details

Kim-Lee combination uses Hall sensor  
to detect coupling status

241. A person of ordinary skill in the art would have found it obvious to incorporate *Lee*'s Hall sensor into *Kim*'s watch-type main device shown in Figure A because *Kim* teaches detecting the coupling status of the sub-device to the main device without providing significant detail how to do this. A person of ordinary skill in the art under these circumstances would have been motivated to identify a system that is comparable to *Kim*'s and to locate additional detail regarding components that can be used to detect the coupling status of the sub-device to the main device.

e.g., IPR2021-00336, Kiaei Declaration, Ex. 1002 at ¶ 241

whether two bodies are coupled to each other. Thus, a POSITA would have understood the *Kim-Lee* system to disclose or suggest a watch-type main device with a second body 100b having a Hall sensor to detect the coupling status of the sub-device to the main device by detecting changes in a magnetic field created by the magnet in the sub-device 300. In such a system, changes in the magnetic field created by the magnet in the sub-device ("first magnet") are detected by the Hall sensor in the second body 100b, causing the sub-device (or a component, e.g., its display) ("electronic circuit") to turn on ("the first magnet ... is employed in actuating the electronic circuit"). *Id.*

e.g., IPR2021-00336, Petition, Paper No. 3 at 66

# LEE SIMILAR TO KIM SO POSITA WOULD HAVE LOOKED TO COMBINE

the system of *Kim*. Like *Kim*, *Lee*'s assignee is also LG Electronics, and *Lee* was filed in the same month. Ex. 1010, Cover; Ex. 1013, Cover. Moreover, *Lee* and *Kim* share portions of their specifications. See, e.g., Ex. 1010, FIG.1; Ex. 1013, FIG. 1.

e.g., IPR2021-00336, Kiaei Declaration, Ex. 1002 at ¶ 242.

factors); EX 1002, ¶¶241-242. *Lee* also provides additional detail regarding how to use a Hall sensor and a magnet to detect the coupling status of two bodies.

EX 1013, ¶¶119-121. A POSITA would have realized that the combination of *Kim*

e.g., IPR2021-00336, Petition, Paper No. 3 at 68-69.

sensor. Petition, 65-67; EX 1002, ¶¶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.*

e.g., IPR2021-00336, Petitioners' Reply, Paper No. 18 at 24-25.

disclosures for several reasons. EX 1002, ¶¶241-243. For example, *Lee* is directed to a system that is comparable to and compatible with the systems disclosed in *Kim*. Compare EX 1013, ¶¶27-70 (discussing mobile electronic devices having;

e.g., IPR2021-00336, Petition, Paper No. 3 at 68.

<b>Lee et al.</b>	
MOBILE TERMINAL AND METHOD OF PROVIDING GRAPHIC USER INTERFACE USING THE SAME	
Inventors:	Khwanhee Lee, Seoul (KR); Woochul Song, Seoul (KR)
Correspondence Address:	LEE, HONG, DEGERMAN, KANG & WAIMEY 660 S. FIGUEROA STREET, Suite 2300 LOS ANGELES, CA 90017 (US)
Assignee:	LG Electronics Inc.
Appl. No.:	12/569,355
Filed:	Sep. 29, 2009

e.g., IPR2021-00336, Lee, Ex. 1013 at 1

<b>Kim et al.</b>	
MOBILE TERMINAL HAVING SUB-DEVICE	
Inventors:	Jong-Hwan Kim, Gyeonggi-do (KR); Sang-Yun Oh, Seoul (KR); Woo-Jin Suh, Seoul (KR); Sang-Hyuck Lee, Seoul (KR)
Correspondence Address:	LEE, HONG, DEGERMAN, KANG & WAIMEY 660 S. FIGUEROA STREET, Suite 2300 LOS ANGELES, CA 90017 (US)
Assignee:	LG Electronics Inc.
Appl. No.:	12/552,766
Filed:	Sep. 2, 2009

e.g., IPR2021-00336, Kim, Ex. 1010 at 1

IPR2021-00335 and -00336

Ground 4 – Obvious in view of Kim & Jiang

# JIANG

## Jiang discloses laser light source for IrDA and benefits thereof

e.g., IPR2021-00336, Petition, Paper No. 3 at 69-70

**Jiang et al.**

**[54] IRDA DATA LINK WITH VCSEL LIGHT SOURCE**

e.g., IPR2021-00336, Jiang, Ex. 1014 at 1

designated **10**. Data link **10** includes a light transmitting device **12** and a light receiving device **13** coupled by a transmission medium such as an optical fiber **14**. Light is emitted from light transmitting device **12** along a path into optical fiber **14** and thence toward light receiving device **13**. In most instances, these devices are transceivers capable of both receiving and sending light signals thereby providing two way communication. Specifically, these devices are typically infra-red data association (IrDA) data link devices that work in a free space medium and which utilize a light source for generating light signals. In the ensuing description the light source for a data link device will be described.

Turning now to FIG. 2, a perspective view illustrating a light source **20** generally designated **20** is illustrated. Light source **20** includes a vertical cavity surface emitting laser (VCSEL) **22** which generates the light signal in the form of a laser beam designated **23**. The use of a VCSEL greatly reduces power consumption while enhancing the ability to increase transmission speeds. This will be discussed in greater detail presently. VCSEL **22**, in this embodiment, is

e.g., IPR2021-00336, Jiang, Ex. 1014 at 23-21

## POSITA WOULD HAVE COMBINED KIM AND JIANG

Kim discloses using IrDA

[0081] The short-range communication module 114 may facilitate short-range communications. Suitable technologies for short-range communication may include, but are not limited to, radio frequency identification (RFID), infrared data association (IrDA), ultra-wideband (UWB), as well as networking technologies such as Bluetooth and ZigBee.

e.g., IPR2021-00336, Kim, Ex. 1010 at ¶81

POSITA would have been motivated to use Jiang's VCSEL to increase communication speed and reduce power consumption

POSITA would have been motivated to incorporate into the main device and the sub-device an IrDA communication module having a laser light source, such as Jiang's VCSEL light source, because Jiang explains the desirability of incorporating a laser light source into an IrDA communication module. EX1002, ¶¶253-258.

e.g., IPR2021-00336, Petition, Paper No. 3 at 70; see also, Jiang, Ex. 1014 at 2:3-21

## PO'S RELIANCE ON HENNY PENNY INAPPOSITE

In *Henny Penny*, Petitioner introduced new ground on reply that the Board declined to address

- Petition based on 2-reference obviousness combination
- Reply introduced single-reference obviousness ground

Here, Petitioners do no introduce new grounds in their Reply

Counsel for HPC confirmed that the obviousness combination presented “in the original petition” was “the idea of taking [Iwaguchi's] sensor and incorporating it into Kauffman.” J.A. 648-49. Following up, a Board member asked: “So just swapping the sensor rather than a broader teaching is what you presented in the petition?” J.A. 649. HPC's counsel answered, “That's right, Your Honor.”

*Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1328 (Fed. Cir. 2019)

In reply, HPC argued that integrating Iwaguchi's TPM sensor into Kauffman's system was actually unnecessary. Rather, HPC contended that Kauffman's sensor alone is capable of monitoring TPMs via conductance measurements.

*Id.* at 1328–29

Date: April 5, 2022

Respectfully submitted,

/Ali R. Sharifahmadian/  
Ali R. Sharifahmadian, Lead Counsel  
Reg. No. 48,202



**CERTIFICATE OF SERVICE**

The undersigned certifies that a copy of **PETITIONERS' ORAL HEARING DEMONSTRATIVES** was served on April 5, 2022, by filing this document through the PTAB E2E system as well as by delivery a copy via email to attorneys of record for Patent Owner at the following addresses:

jedmonds@ip-lit.com  
tarek.fahmi@ascendalaw.com  
sschlather@ip-lit.com)

The parties have agreed to electronic service in this proceeding.

Dated: April 5, 2022

*/Ali R. Sharifahmadian/*  
\_\_\_\_\_  
Ali R. Sharifahmadian