

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INNOVATIVE INTELLIGENT PRODUCTS, LLC d/b/a GPS LOCKBOX,
Petitioner,

v.

NATIONAL PRODUCTS INC.,
Patent Owner.

IPR2021-00623
Patent 10,454,515 B2

Before JO-ANNE M. KOKOSKI, WESLEY B. DERRICK, and
SCOTT B. HOWARD, *Administrative Patent Judges*.

KOKOSKI, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Innovative Intelligent Products, LLC d/b/a GPS Lockbox (“Petitioner”) filed a Petition to institute an *inter partes* review of claims 1, 2, 4, 6, 8–12, 14, 16, and 18–20 (the “challenged claims”) of U.S. Patent No. 10,454,515 B2 (“the ’515 patent,” Ex. 1001). Paper 2 (“Pet.”). National Products Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

Institution of an *inter partes* review is authorized by statute when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314 (2018); *see* 37 C.F.R. § 42.4. For the reasons set forth below, we deny the Petition and do not institute an *inter partes* review.

A. Real Parties-in-Interest

Each party identifies itself as the real party-in-interest. Pet. 1; Paper 5, 2.

B. Related Proceedings

The parties indicate that the ’515 patent is asserted in *National Products Inc. v. Innovative Intelligent Products, LLC d/b/a GPS Lockbox*, Case No. 2:20-cv-00428-RAJ (W.D. Wash.), and *National Products Inc. v. ProClip USA Inc.*, No. 3:20-cv-00439 (W.D. Wash.). Pet. 1; Paper 5, 3.

C. The ’515 Patent

The ’515 patent, titled “Docking Sleeve with Electrical Adapter,” is directed to a cover for protecting a portable electronic device that has an electrical adapter for coupling the device to a docking station. Ex. 1001, code (54), 1:30–33. The ’515 patent describes “a completely integral one-piece elastomeric protective cover, or skin” that partially envelops a portable

electronic device such as a smartphone or tablet, and is of “a size and shape to fit over or closely conform to the smartphone, tablet or another portable electronic device.” *Id.* at 7:4–14. An electrical adapter that is part of the protective cover “includes a male plug having a plurality of electrical connectors extending into a cavity formed by” the protective cover “in an arrangement for mating with a female input/output socket of the” portable electronic device, and “a contactor having a plurality of electrical contacts that are positioned adjacent to an exterior of” the protective cover that “are electrically coupled to one or more of the connectors of the plug.” *Id.* at 7:61–8:3.

The ’515 patent explains that when the portable electronic device is received within the cavity of the protective cover, “the plurality of connectors of the male plug are mated with the female socket of the” portable electronic device, and “the female input/output socket is electrically accessed through the plurality of contacts of the contactor that are exterior of” the protective cover. *Id.* at 8:4–10. The protective cover, with the portable electronic device installed therein, is then inserted into a docking cradle that includes a docking connector that also has a plurality of contacts. *Id.* at 8:11–14. “The docking connector is joined to the contactor of the electrical adapter with one or more of the plurality of contacts of the docking connector being electrically coupled with the contacts of the connector.” *Id.* at 8:14–17. The input/output socket of the portable electronic device, therefore, is electrically accessed through the docking connector of the docking cradle via the electrical adapter of the protective cover. *Id.* at 8:17–20.

D. Illustrative Claims

Petitioner challenges claims 1, 2, 4, 6, 8–12, 14, 16, and 18–20 of the '515 patent. Pet. 3, 10–11. Claims 1 and 11 are independent, illustrative of the claimed subject matter, and reproduced below.

1. An arrangement comprising:
a portable electronic device; and
an adapter coupleable to the portable electronic device and extending away from the portable electronic device for mating with an external connector, the adapter comprising a contactor and a male positioning interface, the contactor comprising a contactor surface and a plurality of contacts exposed and arranged on the contactor surface and electrically coupleable to the portable electronic device, the male positioning interface defining a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the adapter to the external connector, wherein the adapter is configured so that, when coupled to the portable electronic device, the contactor surface is disposed further than any other portion of the adapter from the portable electronic device to form, with the contacts, a male connector configured for coupling to connector contacts within a female receptacle Of the external connector.

Ex. 1001, 34:2–21.

11. An arrangement comprising:
a portable electronic device; and
an adapter coupleable to the portable electronic device and extending away from the portable electronic device for mating with an external connector, the adapter comprising a contactor and a male positioning interface, the connector comprising a flat contactor surface and a plurality of contacts exposed at the flat contactor surface and at least partially flush with the flat contactor surface and electrically coupleable to the

portable electronic device, the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external connector, wherein the contactor is embedded in the male positioning interface, wherein an exposed portion of the flat contact surface has an asymmetric perimeter.

Id. at 34:64–35:12.

E. Prior Art and Asserted Grounds

Petitioner asserts that the challenged claims are unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	References
1, 2, 4, 6, 8–10	102(a)(1)	Song ¹
11, 12, 14, 16, 18–20	103(a)	Song, Hayashi ²
1, 2, 4, 6	102(a)(1)	Kim ³
1, 2, 4, 6, 8–12, 14, 16, 18–20	103(a)	Kim, Song, Hayashi

Pet. 10–11. Petitioner relies on the Declaration of Kimberly K. Cameron, Ph.D., P.E. (“Cameron Declaration,” Ex. 1006) in support of its contentions.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner contends that a person having ordinary skill in the art would have had either “a Bachelor’s Degree in mechanical engineering or a related discipline and at least two years of experience in the design or development of interlocking products (*e.g.* docking cradles and adapters for portable

¹ Korean Intellectual Property Office Registered Utility Model Publication No. 20-0265673, published Feb. 25, 2002 (Ex. 1003 (English translation), Ex. 1019).

² Japanese Unexamined Patent App. Pub. No. 2014-75327, published April 24, 2014 (Ex. 1004 (English translation), Ex. 1020).

³ Korean Intellectual Property Office Registered Patent No. 10-1078214, published Nov. 1, 2011 (Ex. 1005 (English translation), Ex. 1021).

electronic devices),” or “five years or more of experience in the design or development of interlocking products.” Pet. 9. At this stage of the proceeding, Patent Owner neither responds to Petitioner’s proposed definition, nor provides a definition of its own. *See* Prelim. Resp.

For purposes of this Decision, we adopt Petitioner’s proposed definition, which is undisputed on this record, except that we delete the qualifiers “at least” and “or more” to eliminate vagueness as to the amount of practical experience. The qualifier expands the range indefinitely without an upper bound, and thus precludes a meaningful indication of the level of ordinary skill in the art.

B. Claim Construction

We construe each claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b) (2019). Under this standard, claim terms are generally given their plain and ordinary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure.⁴ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013,

⁴ Petitioner incorrectly states that claims in an *inter partes* review are to be construed using the broadest reasonable construction standard, which applied to proceedings filed prior to November 13, 2018. Pet. 9–10; *see also* 83 Fed. Reg. 51,340, 51,341 (Oct. 11, 2018) (adopting “the same claim construction standard used by Article III federal courts and the ITC, both of which follow *Phillips v. AWH Corp.*, 415 F.3d 133 (Fed. Cir. 2005) (en banc) and its progeny”).

1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Neither party proposes an explicit construction for any claim term. *See* Prelim. Resp.; Pet. 9–10. For purposes of this Decision, based on the record before us, we determine that none of the claim terms requires an explicit construction.

C. Anticipation by Song

Petitioner contends that claims 1, 2, 4, 6, and 8–10 are anticipated by Song. Pet. 15–28.

1. Overview of Song

Song is directed to a coupling jack that connects a handsfree to a cellular phone. Ex. 1003, Abs. Song explains that frequent coupling and decoupling of a cellular phone to a connector jack “during short-distance driving of a vehicle result[s] in great inconvenience, and the cellular phone and the connecting data jack significantly wear due to repetitive jack coupling, which became a factor to shorten the service life of a component.” *Id.* at 2.⁵ To address this problem, Song describes an intermediate coupling jack that is constantly coupled to a data connection port of a cellular phone, which is separate from a data connector jack fixed and attached to a handsfree. *Id.*

Song describes attaching a magnet to the fixed data connector jack and a metal member to the intermediate coupling jack, such that, when a user moves the cellular phone to a position close to the fixed data connector jack, the metal member of the intermediate coupling jack on the cellular

⁵ We refer to the page numbers added by Petitioner to the bottom right hand corner of Ex. 1003.

Id. at 17. Figure 4, on the left, is a perspective view illustrating the alignment of intermediate coupling jack part B and fixed data connector jack part A prior to coupling. Ex. 1003, 1. Figure 5, on the right, illustrates the coupling of intermediate coupling jack part B and fixed data connector jack part A. *Id.* Intermediate coupling jack part B includes multiple data terminals 11, metal member 8, and coupling jack 5. *Id.* at 2–3. Fixed data connector jack part A includes guide 6, magnet 7, multiple data coupling terminals 10 connected to electrical line 10-1, and data line fixing part 4. *Id.* at 3.

Petitioner annotates Song’s Figures 4 and 5 by identifying intermediate coupling jack part B as “Adapter” and fixed data connector jack part A as “External Connector.” Pet. 17. On intermediate coupling jack part B, Petitioner also includes arrows pointing to the top of metal member 8 labeled “Male Positioning Interface,” to the side of metal member 8 labeled “Rim,” and to the underside of metal member 8 labeled “Contactor.” *Id.* On fixed data connector jack part A, Petitioner includes arrows pointing to the area of multiple data coupling terminals 10 labeled “Female Receptacle,” and to a corner near magnet 7 labeled “Rim.” *Id.*

Referring to annotated Figures 4 and 5, Petitioner contends that “the adapter B includes a portion that projects outwardly from the electronic device 1 (Ex. 1003, Figs. 1–3) which serves as a male positioning interface that inserts into the external connector A.” Pet. 17. Petitioner also contends that “adapter B includes a contactor 9 having a flat surface that includes a plurality of contacts 11-1 that engage with corresponding contacts 10 of the external connector A.” *Id.* at 17–18 (citing Ex. 1003, 3, Figs. 4–6). In this way, according to Petitioner, Song discloses “the adapter comprising a contactor and a male positioning interface, the contactor comprising a

contactor surface and a plurality of contacts exposed and arranged on the contactor surface and electrically coupleable to the portable electronic device” limitation of claim 1. *Id.* at 18.

Petitioner further contends that Song discloses “the male positioning interface defining a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 1. Pet. 18–19. Specifically, Petitioner contends that “external connector A has a peripheral raised rim 6 that forms the female receptacle, and the male positioning interface of the adapter B has an outer peripheral edge that serves as a rim surrounding the periphery of the contactor 9 of the male positioning interface of the adapter B.” *Id.* at 18. Petitioner contends that:

The peripheral rim of the male positioning interface engages with the raised rim 6 of the external connector A and serves to guide and properly mate the contactor 9 of the adapter B into engagement with the external connector A so that the contacts 11-1 of the contactor 9 properly align and engage with the contacts 10 of the external connector A.

Id. (citing Ex. 1003, 3, Figs. 4–6).

Patent Owner responds that Petitioner does not explain “how Song discloses a ‘rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor.’” Prelim. Resp. 33. According to Patent Owner, “[a]t most, Petitioner discusses what it believes to be the ‘rim’ of the male positioning interface, but never does Petitioner put forth any theory as to how that alleged rim is in contact with any ‘perimeter’ of the alleged contactor surface.” *Id.* at 34.

On this record, we are not persuaded that Petitioner sufficiently establishes that Song discloses “the male positioning interface defining a rim

surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 1.

In particular, we are not persuaded that Petitioner establishes that Song discloses that the male positioning interface defines “a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter.” As illustrated in Annotated Figures 4 and 5 in the Petition, the contactor surface of the identified “contactor” of intermediate coupling jack B extends to the edges of what Petitioner identifies as the claimed “male positioning interface.” *See* Pet. 17–18. Being part of the contactor itself, the “outer peripheral edge” of the contactor neither surrounds, nor is in contact with, the perimeter of the contactor surface, and therefore is not a “rim” as recited in claim 1.

Moreover, Song addresses the process of coupling intermediate coupling jack part B to data connector jack part A. Ex. 1003, 3. Song explains that guide 6, which is part of data connector jack part A (as shown in Figures 4 and 5 above), “induces accurate and constant coupling of” metal members 8 on intermediate coupling jack part B with magnets 7 on data connector jack part A, “and thereby the multiple data coupling terminals 10 of the handsfree are accurately coupled to the multiple coupling terminals 11 formed in the coupling jack 5.” *Id.* Song further explains that the coupling of magnets 7 to metal members 8

is completed as the metal member 8 in FIG. 4 is attached into the guide 6 due to the magnetism. When the two jacks A and B are completely coupled to each other as illustrated in FIG. 5, the multiple handsfree data coupling terminals 10 connected to an electric line 10-1 buried in the data line fixing part 4 are connected to multiple surface-contact terminals 11-1 formed in the intermediate coupling jack B and are re-connected to the

cellular phone 1 through the multiple data terminals 11 formed in the coupling jack 5, and thereby the entire coupling operation of the cellular phone 1 to the handsfree 2 is completed.

Id. (emphases added). Song, therefore, teaches that it is guide 6 and magnets 7 on data connector jack part A, in combination with metal members 8 on intermediate coupling jack part B, that guide the proper mating of intermediate coupling jack part B with data connector jack part A.

For these reasons, we are not persuaded that Petitioner establishes that Song discloses “the male positioning interface defining a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 1. Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that claim 1 is anticipated by Song.

3. *Claims 2, 4, 6, and 8–10*

Petitioner contends that Song discloses all of the limitations of claims 2, 4, 6, and 8–10 of the ’515 patent. Pet. 21–28. Claims 2, 4, 6, and 8–10 depend, directly or indirectly, from claim 1. Ex. 1001, 34:22–28, 34:31–32, 34:39–42, 34:46–63. Because Petitioner does not establish that Song discloses “the male positioning interface defining a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 1, we determine, for the same reasons, that the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that claims 2, 4, 6, and 8–10 are anticipated by Song.

D. Obviousness over Song and Hayashi

Petitioner contends that the subject matter of claims 11, 12, 14, 16, and 18–20 would have been obvious over the combined teachings of Song and Hayashi. Pet. 32–46. Petitioner relies on the Cameron Declaration in support of its contentions.

1. Overview of Hayashi

Hayashi relates to “a mobile device adapter to be mounted on an external connecting terminal of a mobile device.” Ex. 1004 ¶ 1. The adapter includes a housing with a plug portion that is inserted into an external connecting terminal of a mobile device, and a base portion that “is exposed to the outside and supports electrode planes.” *Id.* ¶ 15. A number of grooves are formed inside the plug portion, each of which fits to each terminal of the external connecting terminal of a mobile device. The base portion includes a number of conductor components, each of which has a first electrode plane, a second electrode plane, and a lead portion. *Id.* ¶¶ 15–16. Hayashi explains that the first electrode plane and second electrode plane connect with an external device (such as a docking cradle), and the lead portion connects to the mobile device. *Id.* ¶ 16.

Hayashi also describes a mobile device holder that is connected with a cable “to a commercial power source such as a cigar socket of a car.” *Id.* ¶ 18. The mobile device holder includes a spring connector that is equipped with a connector housing and a number of terminal pins equal to the number of the conductor components in the adapter. *Id.* ¶ 19. A mobile device is connected to the mobile device holder by placing the concave portion of the base of the adapter over the connector housing of the spring connector such that the first electrode plane of the conductor component of the adapter

forms an electrical connection with the terminal pin in the mobile device holder. *Id.* ¶ 21.

2. *Claims 11, 12, 14, 16, and 18–20*

Independent claim 11 requires that the male positioning interface of the adapter defines “a rim to guide proper mating of the contactor of the adapter to the external connector.” Ex. 1001, 34:64–35:12. As it did with respect to the similar limitation in claim 1, Petitioner contends that the outer peripheral edge of the male positioning interface of intermediate coupling jack part B described in Song is a rim that “engages with the raised rim 6 of the external connector A and serves to guide and properly mate the contactor 9 of the adapter B into engagement with the external connector A” such that “the contacts 11-1 of the contactor 9 properly align and engage with the contacts 10 of the external connector A.” Pet. 36.

For the reasons set forth above with respect to claim 1, we are not persuaded that Petitioner demonstrates that Song discloses “the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external connector” as required by claim 11. *See* Section II.C.2, *supra*. Petitioner does not rely on Hayashi to remedy this deficiency in Song. Accordingly, we determine that Petitioner does not establish a reasonable likelihood that it would prevail in showing that independent claim 11, and claims 12, 14, 16, and 18–20 that depend, directly or indirectly, therefrom, would have been obvious over the combined teachings of Song and Hayashi.

E. Anticipation by Kim

Petitioner contends that claims 1, 2, 4, and 6 are anticipated by Kim. Pet. 46–58.

1. Overview of Kim

Kim is directed to a “coupler for connecting an electronic device and a connector” that is inserted into a recessed port of the electronic device “and maintains the inserted state to completely block infiltration of foreign matter into the recessed port and is magnetically coupled to the connector so as to be flexibly decoupled from the connector by an external impact.” Ex. 1005

¶ 1. Figure 1 of Kim is reproduced below.

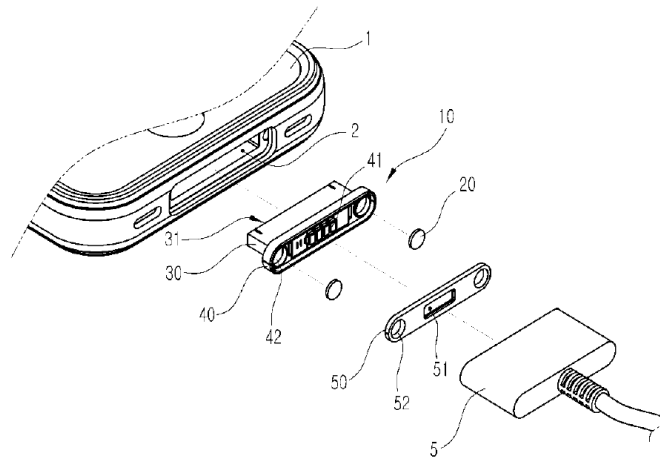


Figure 1 is an exploded perspective view illustrating a state where the coupler described in Kim is coupled to an electronic device and a connector, and depicts electronic device 1, coupler 10, magnetic couple 20, cap 50, and connector 5 as separate pieces aligned as they would be before being connected together. *Id.* ¶ 26. One side of coupler 10 is coupled to recessed port 2 of electronic device 1, and the other side is connected to connector 5 that provides power supply or data communication, “such that the coupler fulfills an intermediate connection function between” electronic device 1 and connector 5. *Id.* ¶ 27. Coupler 10 includes first terminal 31 configured to connect to electronic device 1, second terminal 41 configured to connect to connector 5, magnetic coupler 20, protruded portion 30, base 40, and mounting groove 42. *Id.* ¶¶ 28–29, 46, 76. Cap 50, which is configured to

cover the surface of base 40, includes orifice 51 and recess 52. *Id.* ¶¶ 86–88. Orifice 51 is “formed to penetrate the cap such that the second terminal 41 of the base 40 can be exposed to the outside.” *Id.* ¶ 86. Recess 52 “is formed to be recessed toward the magnetic coupler 20” and “presses the magnetic coupler 20 accommodated in the mounting groove 42 from above to minimize a space in which the magnetic coupler 20 is moved.” *Id.* ¶¶ 88, 92.

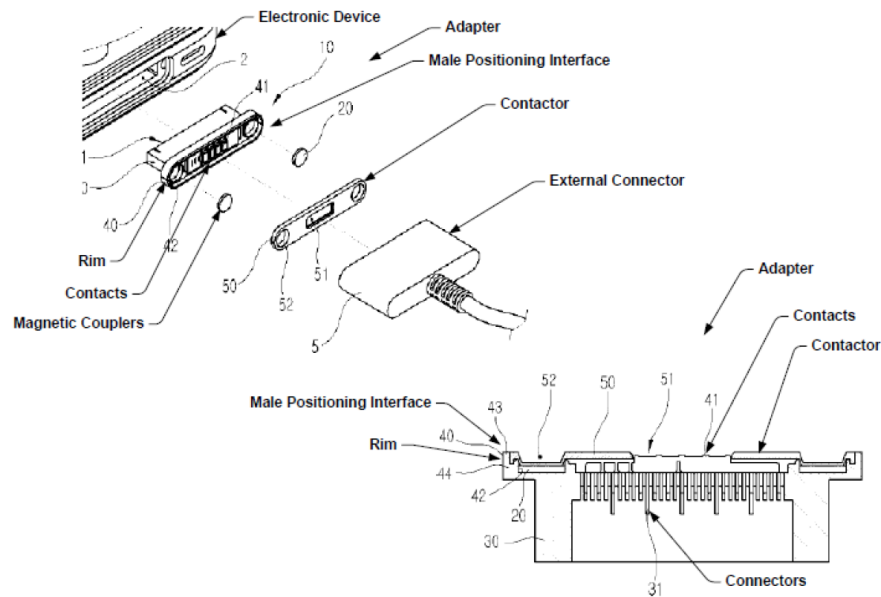
Kim explains that a magnet or ferromagnetic material is provided at connector 5 so that connector 5 can be magnetically coupled to second terminal 41 of coupler 20. *Id.* ¶ 35. Electronic device 1 is mechanically coupled to first terminal 31 of coupler 10 by male-female coupling at recessed port 2. *Id.*

2. Claims 1, 2, 4, and 6

Petitioner contends that Kim discloses all of the elements of claim 1. Pet. 49–54. With respect to “the adapter comprising a contactor and a male positioning interface, the contactor comprising a contactor surface and a plurality of contacts exposed and arranged on the contactor surface and electrically coupleable to the portable electronic device” limitation of claim 1, Petitioner contends that “adapter 10 includes a male positioning interface 40 that projects outwardly from the electronic device 1,” and “a contactor 50 having a plurality of contacts 41 disposed therein that engage corresponding contacts 6 of the external connector 5.” *Id.* at 51 (citing Ex. 1005 ¶¶ 42–46, 59, Figs. 1, 3B, 5, 6). Petitioner further contends that contacts 41 are coupled to electronic device 1 by connectors 31 that extend through adapter 10. *Id.*

Petitioner provides the following annotated versions of Figures 1 and 6 in Kim to illustrate its contentions with respect to “the male

positioning interface defining a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 1.



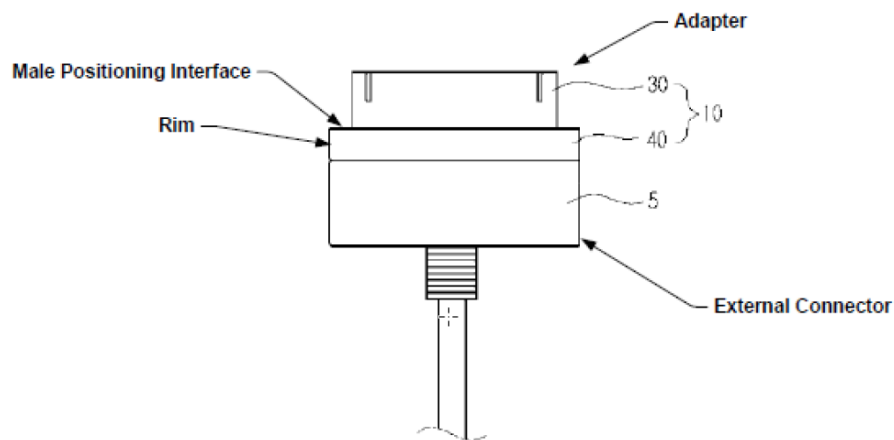
(Ex. 1005 Figs. 1,6)(words added).

Figure 1⁶ on the top left is an exploded perspective view illustrating a state where the coupler described in Kim is coupled to an electronic device and a connector, and Figure 6 on the bottom right is a cross-sectional view illustrating a state where cap 50 is mounted on the coupler. Pet. 52; Ex. 1005 ¶ 24. Petitioner annotates Figures 1 and 6 by identifying coupler 10 as “Adapter,” cap 50 as “Contactor,” connector 5 as “External Connector,” contacts 41 as “Contacts,” magnetic coupler 20 as “Magnetic Couplers,” and connectors 31 as “Connectors.” Pet. 52. Petitioner also

⁶ This annotated version of Figure 1, taken directly from the Petition, truncates the figure such that numbers labeling certain components are partially cut off or omitted altogether. Compare Pet. 52, Fig. 1 with Ex. 1005, Fig. 1 (reproduced in Section E.1, *supra*).

includes arrows pointing at the portion of coupler 10 to which cap 50 is attached labeled “Male Positioning Interface,” and an arrow pointing at the top left side of coupler 10 between base 40 and mounting groove 42 labeled “Rim.” *Id.*

Petitioner also provides an annotated version of Kim’s Figure 4, reproduced below, to support its contention that “[t]he rim of the male positioning interface 40 guides proper mating of the adapter 10 with the external connector 5.” Pet. 52–53.



(Ex. 1005 Fig. 4).

Figure 4 is a perspective view of a coupled state of coupler 10 to connector 5. Ex. 1005 ¶ 5. Petitioner annotates Figure 4 by adding an arrow pointing to the top of protruded portion 30 labeled “Adapter,” an arrow pointing to the line where protruded portion 30 meets base 40 labeled “Male Positioning Interface,” and an arrow pointing to base 40 below that line labeled “Rim.” Pet. 53.

On the record before us, we are not persuaded that Petitioner establishes that Kim discloses “the male positioning interface defining a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the

adapter to the external connector” limitation of claim 1. As an initial matter, is unclear in the Petition what part of Kim Petitioner contends is the recited “rim.” Petitioner only refers to Annotated Figures 1 and 6, and states that “male positioning interface 40 of the adapter 10 includes a rim that surrounds and is in contact with a perimeter of the contactor 50.” Pet. 52. The arrows Petitioner added to Annotated Figures 1 and 6 appear to be identifying base 40 of coupler 10 as the male positioning interface and the rim. Petitioner, however, does not explain how base 40 can be *both* a male positioning interface *and* a rim surrounding and in contact with a perimeter of the contactor.

Petitioner also does not adequately explain how Annotated Figure 4 shows that “[t]he rim of the male positioning interface 40 guides proper mating of the adapter 10 with the external connector 5.” Pet. 52. In describing Figure 4, Kim explains:

As illustrated in FIG. 4, the coupler 10 according to the present invention provides a method in which specifically the second terminal 41 formed at the base 40 is magnetically coupled to the connection terminal 6 of the connector 5. In other words, in this structure, the second terminal 41 of the coupler 10 and the connection terminal 6 of the connector 5 are coupled to each other through the magnetic coupling between magnetic couplers 20 included in both the coupler 10 and the connector 5, without terminals having separate male-female shapes.

Ex. 1005 ¶¶ 68–69. Thus, Kim teaches that coupler 10 and connector 5 are properly aligned because of the magnetic coupling achieved by magnetic couplers 20 placed on both coupler 10 and connector 5. Petitioner does not direct us to, nor do we discern, any indication in Kim that there is a rim on base 40 that plays any role in the proper mating of coupler 10 and connector 5, as Petitioner contends. Rather, as set forth in Kim’s Figure 6,

what is identified by Petitioner as the “Rim” functions to position elements of coupler 10 relative to one another, rather than to position any part of coupler 10 to connector 5.

For these reasons, we are not persuaded that Petitioner establishes that Kim discloses “the male positioning interface defining a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 1. Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that claim 1, and claims 2, 4, and 6 that depend directly therefrom, are anticipated by Kim.

F. Obviousness over Kim, Song, and Hayashi

Petitioner contends that the subject matter of claims 1, 2, 4, 6, 8–12, 14, 16, and 18–20 would have been obvious over the combined teachings of Kim, Song, and/or Hayashi. Pet. 32–46. Petitioner relies on the Cameron Declaration in support of its contentions.

1. Claims 1, 2, 4, 6, and 8

Petitioner argues that, to the extent that Kim does not expressly disclose “the male positioning interface defining a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 1, “the arrangement of Kim may be readily modified by adding the peripheral raised rim 6 of the external connector A of Song to the external connector 5 of Kim.” Pet. 59–60 (internal citations omitted). Petitioner argues that when Kim is modified in this way, “the outer peripheral rim of the male positioning interface 40 of the adapter 10 of Kim would cooperate with the raised rim 6 to guide and properly mate”

contactor 50 of adapter 10 “into engagement with the external connector A so that the contacts 41 of the connector 50 of Kim would properly align and engage with the contacts 10 of the external connector A.” *Id.* at 60–61.

We are not persuaded by Petitioner’s arguments. Claim 1 requires that the *adapter* includes a *male positioning interface* that defines a rim “to guide the proper mating of the contactor of the adapter to the external connector.” Petitioner’s proposed modification of Kim adds a rim *to the external connector* that would guide the proper mating of the adapter to the external connector. Because Petitioner does not demonstrate that the proposed modification of Kim would include a rim defined the male positioning interface of the adapter, Petitioner does not establish that the combined teachings of Kim and Song teach “the male positioning interface defining a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 1. Petitioner does not rely on Hayashi to remedy this deficiency.

For these reasons, we determine, on this record, that the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the subject matter of claim 1, and claims 2, 4, 6, and 8–10 that depend, directly or indirectly, therefrom, would have been obvious over the combined teachings of Kim, Song, and/or Hayashi.

2. *Claims 11, 12, 14, and 16–20*

As it did with respect to the similar limitation in claim 1, Petitioner contends that, to the extent that Kim does not expressly disclose “the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external contactor” limitation of claim 11, “the external

connector 5 of Kim may be readily modified by adding the rim 6 of the external connector of Song [external connector] A.” Pet. 67.

For the reasons set forth in Section II.F.1 above with respect to claim 1, we are not persuaded that Petitioner demonstrates, on this record, that the combined teachings of Kim and Song teach “the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external contactor” limitation of claim 11. Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the subject matter of claim 11, and claims 12, 14, 16, and 18–20 that depend, directly or indirectly, therefrom, would have been obvious over the combined teachings of Kim, Song, and/or Hayashi.

III. CONCLUSION

Based on the arguments in the Petition and Preliminary Response, and the evidence of record, we determine that Petitioner has not established a reasonable likelihood that it would prevail on its challenge that claims 1, 2, 4, 6, 8–10, 11, 12, 14, 16, and 18–20 of the ’515 patent are unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied* and no trial is instituted.

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