

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.

IPR2021-00767
Patent 10,630,334 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 1–3, 4–7, and 14–18 (the “challenged claims”) of U.S. Patent No. 10,630,334 B2 (“the ’334 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 also* 37 C.F.R. § 42.4 (2020). 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 ’334 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.) (“the Washington litigation”). Pet. 1; Paper 5, 3.

C. The ’334 Patent

The ’334 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 ’334 patent describes “a completely integral one-piece elastomeric protective cover, or skin” that “is a sheath molded of a suitable elastic or flexibly resilient elastomer, such as but not limited to

vinyl, in a size and shape to fit over or closely conform to the” portable electronic device. *Id.* at 7:9–14. 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 ’334 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.

The ’334 patent further teaches that “a hard (or rigid) shell can be utilized with the flexible cover or skin to provide additional protection to [the] electronic device disposed within the skin.” Ex.1001, 28:63–65. The

hard shell includes an opening through which a portion of the adapter of the flexible cover “protrudes or is accessible for connection to a docking cradle or other device.” *Id.* at 29:20–26.

D. Illustrative Claims

Petitioner challenges claims 1–3, 7–11, and 14–18 of the ’334 patent. Pet. 3, 10–11.¹ Claims 1 and 10 are independent, illustrative of the claimed subject matter, and reproduced below.

1. An arrangement, comprising:

an adapter coupleable to a 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; and

a hard shell configured to receive the portable electronic device and adapter, wherein the hard shell is configured so that the adapter extends out of the hard shell for mating with the external connector;

wherein the adapter is detachable from the hard shell by a user.

Ex. 1001, 34:2–19.

¹ In the introductory paragraph of the Petition, Petitioner includes claim 4 in the list of the challenged claims, but omits claim 3. Pet. 3. The statement of the grounds and Petitioner’s analyses thereof, however, include claim 3 but not claim 4. *Id.* at 9, 11–12, 25, 40–41, 54–56, 62, 71. We consider the grounds as Petitioner presents them, and therefore do not consider claim 4 to be a challenged claim.

10. An arrangement, comprising:

an adapter coupleable to a 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 at the 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; and

a hard shell configured to receive the portable electronic device and adapter, wherein the hard shell defines an opening through which the adapter protrudes when received by the hard shell;

wherein the adapter is detachable from the hard shell.

Id. at 34:58–35:5.

E. References Relied Upon

Petitioner relies on the references listed below (Pet. 11–12):

Reference	Date	Exhibit No.
US Patent No. 9,147,966 B2 (“An 1”)	Sept. 29, 2015	1032
U.S. Patent App. Pub. No. 2017/0098916 A1 (“Carnevali 3”)	Apr. 6, 2017	1008
U.S. Patent App. Pub. No. 2015/0301561 A1 (“Carnevali 1”)	Oct. 22, 2015	1006
US Patent App. Pub. No. 2014/0363988 A1 (“An 2”)	Dec. 11, 2014	1033
WO 2017/004072 A1 (“Carnevali 2”)	Jan. 5, 2017	1007
Korean Registered Patent No. 10-1078214 (“Kim”)	Nov. 1, 2011	1004 (English translation), 1037
Korean Registered Utility Model Publication No. 20-0265673 (“Song”)	Feb. 25, 2002	1005 (English translation), 1038
Chinese Published Patent Disclosure No. CN 1312603A (“Huang”)	Sept. 12, 2001	1009 (English translation), 1039

Reference	Date	Exhibit No.
GPS Lockbox Flex product shown on Netlink Communications website (“GPS 1”)	Nov. 3, 2016	1003
GPS Lockbox Flex 8 model for Samsung Tab E Tablet Video (“GPS 2”)	Nov. 3, 2016	1034
What is GPS Lockbox Video (“GPS 3”)	Mar. 13, 2017	1035
GPS Lockbox Flex–Product Overview Video (“GPS 4”)	Oct. 30, 2017	1036

Patent Owner argues that Petitioner does not establish that GPS 1, GPS 2, GPS 3, and GPS 4 (collectively, the “AP Publications”), and Carnevali 1, Carnevali 2, and Carnevali 3 are prior art to the ’334 patent. Prelim. Resp. 24–26.

F. Asserted Grounds

As articulated by Petitioner, the Petition includes seven asserted grounds of unpatentability: (1) Ground 1a (claims 1–3, 7–11, and 14–18 as anticipated by GPS 1, GPS 2, GPS 3, or GPS 4); (2) Ground 1b (claims 1–3, 7–11, and 14–18 as obvious over Carnevali 1, Carnevali 2, or Carnevali 3 in view of each of the AP Publications); (3) Ground 2a (claims 1–3, 10, 11, 14, and 15 as anticipated by Kim); (4) Ground 2b (claims 1–3, 7–11, and 14–18 as obvious over Kim in view of Song); (5) Ground 2c (claims 1–3, 10, 11, 14, and 15 as obvious over Kim in view of Song, and further in view of An 1); (6) Ground 2d (claims 7–9 and 16–18 as obvious over Kim in view of Song, An 1, and An 2); and (7) Ground 2e (claims 7–9 and 16–18 as obvious over Kim in view of Song and Huang). Pet. 11–12. Grounds 1a and 1b, however, rely on references in the alternative, such that there are, in fact, a total of 21 different grounds (or combinations of prior art), as indicated in the table below.

Claims Challenged	35 U.S.C. §	Reference(s)
1–3, 7–11, 14–18	102(a)(1)	GPS 1
1–3, 7–11, 14–18	102(a)(1)	GPS 2
1–3, 7–11, 14–18	102(a)(1)	GPS 3
1–3, 7–11, 14–18	102(a)(1)	GPS 4
1–3, 7–11, 14–18	103	Carnevali 1, GPS 1
1–3, 7–11, 14–18	103	Carnevali 1, GPS 2
1–3, 7–11, 14–18	103	Carnevali 1, GPS 3
1–3, 7–11, 14–18	103	Carnevali 1, GPS 4
1–3, 7–11, 14–18	103	Carnevali 2, GPS 1
1–3, 7–11, 14–18	103	Carnevali 2, GPS 2
1–3, 7–11, 14–18	103	Carnevali 2, GPS 3
1–3, 7–11, 14–18	103	Carnevali 2, GPS 4
1–3, 7–11, 14–18	103	Carnevali 3, GPS 1
1–3, 7–11, 14–18	103	Carnevali 3, GPS 2
1–3, 7–11, 14–18	103	Carnevali 3, GPS 3
1–3, 7–11, 14–18	103	Carnevali 3, GPS 4
1–3, 10, 11, 14, 15	102(a)(1)	Kim
1–3, 7–11, 14–18	103	Kim, Song
1–3, 10, 11, 14, 15	103	Kim, Song, An1
7–9, 16–18	103	Kim, Song, An1, An2
7–9, 16–18	103	Kim, Song, Huang

Pet. 10–11. Petitioner relies on the Declaration of Kimberly K. Cameron, Ph.D., P.E. (Ex. 1010) 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 electronic devices),” or “five years or more of experience in the design or development of interlocking products.” Pet. 10. 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, if not deleted, expands the range indefinitely without an upper bound, and thus would preclude 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). 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.² *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, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

² 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. 10–11; *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 1303 (Fed. Cir. 2005) (en banc) and its progeny”).

Neither party proposes an explicit construction for any claim term. *See* Prelim. Resp.; Pet. 10–11. 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 the AP Publications

Petitioner contends that claims 1–3, 7–11, and 14–18 are anticipated by each of the AP Publications (GPS 1, GPS 2, GPS 3, and GPS 4). Pet. 14–30. Petitioner’s contentions are based on its allegation that the priority date of the challenged claims is December 27, 2018. *Id.* at 5–9, 14. According to Petitioner, each of the AP Publications depict a product that Patent Owner accuses of infringing the ’334 patent in the Washington litigation. *Id.* at 14. Petitioner contends that GPS 1 “depicts webpages posted November 3, 2016,” and GPS 2, GPS 3, and GPS 4 “are videos posted on YouTube in 2016 and 2017,” and that they all show Petitioner’s accused products. *Id.* at 15 (citing Ex. 1028 ¶¶ 6–17; Ex. 1026, 3–4).

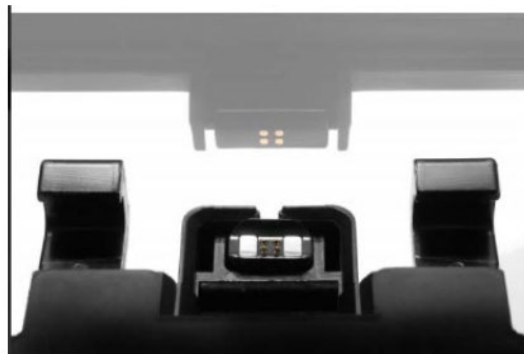
Patent Owner argues that the AP Publications post-date the earliest priority date to which the ’334 patent is entitled (either February 24, 2014, or June 29, 2015). Prelim. Resp. 23–24, 27. Patent Owner also argues that Petitioner does not establish that the AP Publications were publicly accessible before the priority date of the ’334 patent. *Id.* at 26–28. Because we determine, for the reasons set forth below, that Petitioner does not establish a reasonable likelihood of showing that the challenged claims are anticipated by the AP Publications, it is not necessary for us determine whether the AP Publications qualify as prior art to the ’334 patent for purposes of this Decision.

1. *Claims 1–3 and 7–9*

Petitioner contends that each of the AP Publications discloses all of the limitations of claim 1. Pet. 16–24. Petitioner’s contentions are based on Patent Owner’s infringement contentions in the Washington litigation. For example, Petitioner contends that “[u]nder PO’s theories of infringement, GPS 1 discloses” the recitations of claim 1 directed to “an adapter coupleable to a portable electronic device for mating with an external connector.” *Id.* at 16 (citing Ex. 1025, 1–6). Petitioner asserts that the two images from Patent Owner’s infringement contentions, reproduced below, disclose the recited adapter. *Id.* at 16–17.



(Ex. 1025 p. 2).



(Ex. 1025 p. 3).

Patent Owner’s infringement contentions state that the images show Petitioner’s ATMOS Temperature Controlling Cradle Kit for Samsung Galaxy TAB A 8" Product. Ex. 1025, 1–2. The image on the left reflects what appears to be the back of a tablet case, and has a red box drawn around an adapter on the bottom of the case. *Id.* The image on the right reflects

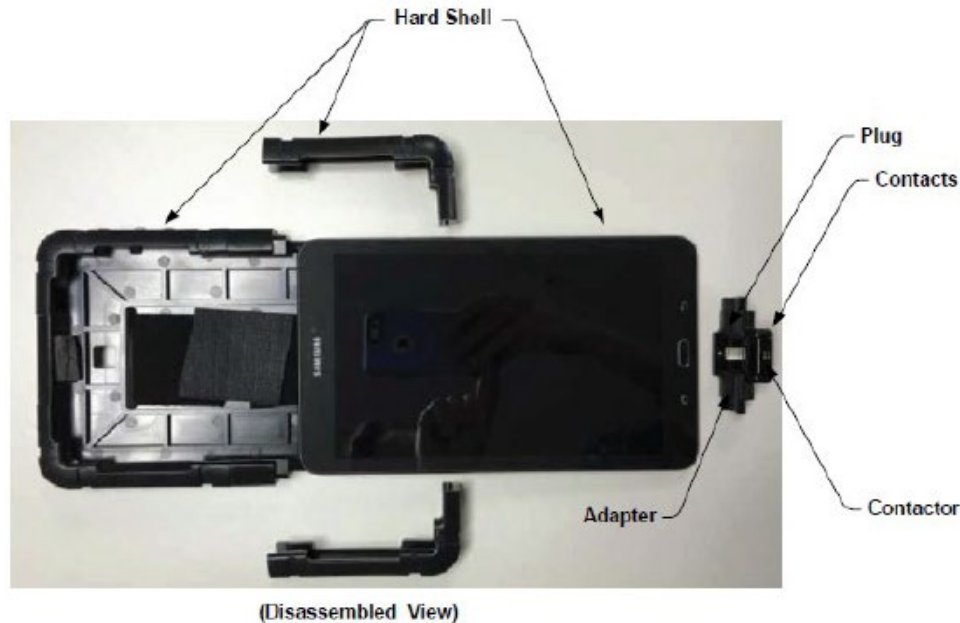
what appears to be a docking cradle with an external connector for mating with the adapter on the tablet case. *Id.*

Petitioner also relies on annotated images from GPS 1, reproduced below, with respect to the adapter limitation of claim 1. Pet. 17–18.



The above image shows front and back views of a product called the “Flex 8,” which GPS 1 describes as “a rugged, impact-resistant tablet casing (with hand strap), with a locking bracket that can be mounted in a vehicle.” Ex. 1003, 1, 4–5. Petitioner annotates the images with arrows identifying the tablet inserted in the casing as “Electronic Device,” the top and sides of the casing as “Hard Shell,” a portion of the bottom of the casing as “Adapter,” and, on the back view of the Flex 8, portions of the identified adapter as “Contactor” and “Contacts.” Pet. 18.

Petitioner also provides an annotated version of an image of the disassembled parts of the Flex 8, reproduced below. Pet. 18.



(Ex. 1003 p. 3)(annotations added).

The above image shows the component parts of the Flex 8 before the tablet is inserted into the casing. The bottom corner pieces are separated from the casing, which Petitioner identifies with arrows as “Hard Shell,” a tablet is aligned for insertion into the casing, and a separate piece Petitioner identifies with arrows as “Adapter” with “Contact,” “Contactor,” and “Plug” is positioned at the bottom of the tablet. *Id.*

Claim 1 requires that (1) the adapter comprises a contactor and male positioning interface; (2) the contactor comprises a contactor surface and a plurality of contacts exposed and arranged on the surface that are electrically coupleable to the electronic device; (3) the male positioning interface defines a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter; and (4) the rim guides the proper mating of the contactor of the adapter to the external connector. Ex. 1001, 34:3–13. Petitioner identifies components in the images of the Flex 8 taken from GPS 1 that it purports to be an adapter comprising a contactor with contacts, but does not explain why or how those identified components meet

the limitations of claim 1. Petitioner also fails direct us to any disclosure in GPS 1 from which we can identify, or discern the function of, any component of the device identified in those images. *See* Pet. 16–18 (Petitioner’s contentions regarding the adapter limitation of claim 1); *see also* Ex. 1003 (GPS 1, nowhere identifying any feature of the device by reference to the images). Additionally, Petitioner does not identify anything in the images corresponding to the recited “male positioning interface” or “rim surrounding, and in contact with, a perimeter of the contactor surface . . . to guide proper mating of the contactor of the adapter to the external connector” limitations of claim 1.

It is the petitioner’s burden from the outset to show with particularity why a challenged claim is unpatentable. *Harmonic Inc. v. Avid Tech. Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). In that regard, a petition for *inter partes* review must identify how the challenged claims are unpatentable, and must specify where each element of the claim is found in the relied-upon prior art. 37 C.F.R. § 42.104(b); *see also* 35 U.S.C. § 312(a)(3) (a petition must identify “with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for challenge to each claim”). A petition must also include “a detailed explanation of the significance of the evidence including material facts, and the governing laws, rules, and precedent.” 37 C.F.R. § 42.22(a)(2). Here, the Petition does not identify sufficiently where each element of claim 1 is found in GPS 1, and does not include a detailed explanation of the significance of the evidence.

Specifically, Petitioner fails to explain with any particularity how or why the images reproduced above support its view that GPS 1 discloses “an adapter coupleable to a portable electronic device for mating with an

external connector” as recited in claim 1. Pet. 16–18. Petitioner merely states that “[u]nder PO’s theories of infringement, GPS 1 discloses these recitations” and provides the annotated images reproduced above. *Id.* Patent Owner’s infringement contentions, however, are directed to a different product (the ATMOS Temperature Controlling Cradle Kit for Samsung Galaxy TAB A 8" Product), and Petitioner does not explain how that product relates, if at all, to the Flex 8 depicted in GPS 1. Moreover, Petitioner’s citation to Patent Owner’s infringement contentions to support conclusory statements not otherwise supported in the Petition amounts to an improper incorporation by reference. 37 C.F.R. § 42.6(a)(3) (“Arguments must not be incorporated by reference from one document into another document.”). The Petition, therefore, falls short of adequately establishing the identity or function of any component in the images of the Flex 8 from GPS 1.

Petitioner states that, although the Petition primarily focuses on GPS 1 because “webpages are most easily reproduced” therein, “the same analysis applies to each of the AP Publications.” Pet. 16. As was the case with Petitioner’s challenge based on GPS 1, the Petition fails to explain with any particularity how the products depicted in GPS 2, GPS 3, and GPS 4 support its view that GPS 2, GPS 3, and GPS 4 each discloses “an adapter coupleable to a portable electronic device for mating with an external connector” as recited in claim 1. Pet. 18–21. Petitioner provides two still images from each of GPS 2, GPS 3, and GPS 4, which appear to show the Flex 8, without annotations or further explanation. *Id.* The Petition, therefore, also does not identify sufficiently where each element of claim 1 is found in GPS 2, GPS 3, and GPS 4.

For these reasons, we are not persuaded that Petitioner sufficiently establishes that any of the AP Publications discloses the recitations of claim 1 directed to “an adapter coupleable to a portable electronic device for mating with an external connector.” Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner will prevail in showing that claim 1, and claims 2, 3, and 7–9 that depend directly or indirectly therefrom, are anticipated by the AP Publications.

2. Claims 10, 11, and 14–18

Petitioner contends that each of the AP Publications disclose all of the limitations of independent claim 10. Pet. 26–27. Claim 10, like claim 1, requires “an adapter coupleable to a portable electronic device for mating with an external connector,” wherein (1) the adapter comprises a contactor and male positioning interface; (2) the contactor comprises a contactor surface and a plurality of contacts exposed at the surface that are electrically coupleable to the electronic device; (3) the male positioning interface defines a rim surrounding, and in contact with, a perimeter of the contactor surface of the contactor of the adapter; and (4) the rim to guide the proper mating of the contactor of the adapter to the external connector. Ex. 1001, 34:59–67. Petitioner contends that the “AP Publications disclose these limitations as shown above for claim 1.” Pet. 27.

For the reasons set forth in Section II.C.1 with respect to claim 1, we are not persuaded that Petitioner demonstrates, on this record, that any of GPS 1, GPS 2, GPS 3, and GPS 4 disclose the recitations of claim 10 directed to “an adapter coupleable to a portable electronic device for mating with an external connector.” Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner will prevail in

showing that claim 10, and claims 11, and 14–18 that depend directly or indirectly therefrom, are anticipated by the AP Publications.

D. Obviousness over Carnevali 1, Carnevali 2, or Carnevali 3 and the AP Publications

Petitioner contends that claims 1–3, 7–11, and 14–18 would have been obvious over the combined teachings of Carnevali 1, Carnevali 2, or Carnevali 3 and the AP Publications. Pet. 30–45. The '334 patent claims priority to Carnevali 1, as do Carnevali 2 (Ex. 1006, 1:3–8) and Carnevali 3 (Ex. 1008, code (60)), but Carnevali 2 and Carnevali 3 are not in the priority chain of the '334 patent. Ex. 1001, code (63). Petitioner asserts that Carnevali 1, Carnevali 2, and Carnevali 3 are prior art “because there is no support in the specifications of Carnevali 1–3 for the recitations ‘wherein the adapter is detachable from the hard shell’ as recited in all of the Challenged Claims.” Pet. 14. Petitioner’s challenges are based on Petitioner’s contention that the '334 patent is not entitled to a priority date earlier than the December 27, 2018, filing date of the application that led to its issuance. Pet. 9, 11; Ex. 1001, code (63). As a threshold issue, therefore, we must determine whether Petitioner sufficiently establishes that Carnevali 1, Carnevali 2, and Carnevali 3 qualify as prior art to the challenged claims of the '334 patent.

1. Whether Carnevali 1, Carnevali 2, and Carnevali 3 Qualify as Prior Art

The '334 patent issued from U.S. Patent Application No. 16/233,662 (“the '662 application,” Ex. 1024), which was filed on December 27, 2018 as a continuation of U.S. Patent Application No. 15/195,176 (“the '176 application”), which was filed on June 28, 2016 as continuation-in-part of U.S. Patent Application No. 14/936,517 (“the '517 application”), which was

filed on November 9, 2015 as a continuation-in-part of U.S. Patent Application No. 14/829,378 (“the ’378 application”), which was filed on August 18, 2015 as a continuation-in-part of U.S. Patent Application No. 14/754,492 (“the ’492 application,” Ex. 1016), which was filed on June 29, 2015 as a continuation-in-part of PCT/US2015/017131, which was filed on February 23, 2015 as a continuation-in-part of U.S. Patent Application No. 14/222,320, filed on March 21, 2014. Ex. 1001, code (63). The ’334 patent also claims priority to U.S. Provisional Application No. 62/040,037, filed on August 21, 2014, and U.S. Provisional Application No. 61/943,986 (“the ’986 provisional”), filed on February 24, 2014. *Id.* at code (60).

Carnevali 1 is the publication of the ’492 application. Ex. 1006, code (21). Carnevali 2 was filed as a continuation of the ’176 application. Ex. 1007, 1:3–4. Carnevali 3 was filed as a division of the ’378 application. Ex. 1008, code (63). Accordingly, Petitioner’s challenges based on Carnevali 1, Carnevali 2, and Carnevali 3 are based on the ’334 patent not being entitled to a priority date earlier than the December 27, 2018 filing date of the ’662 application. Pet. 9, 11; Ex. 1001, code (63).

Petitioner’s contentions are based solely on the “wherein the adapter is detachable from the hard shell” limitation of independent claims 1 and 10. Specifically, Petitioner argues that “[t]he first disclosure of ‘the adapter is detachable from the hard shell’ appeared in dependent claims 3 and 12 of the ’662 Application filed on December 27, 2018.” Pet. 14 (citing Ex. 1024, 47:20–21, 48:31–49:1). In other words, Petitioner argues that the ’492 application (which was published as Carnevali 1) does not provide support for a hard shell configured to receive a portable electronic device where “the adapter is detachable from the hard shell” as recited in independent claims 1

and 10, and, therefore, the '334 patent cannot rely on the benefit of priority of the '492 application.

“It is elementary patent law that a patent application is entitled to the benefit of the filing date of an earlier filed application only if the disclosure of the earlier application provides support for the claims of the later application, as required by 35 U.S.C. § 112.” *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008) (citations omitted). “To satisfy the written description requirement the disclosure of the prior application must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, [the inventor] was in possession of the invention.” *Id.* (citations omitted). The sufficiency of written description support is based on “an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010 (en banc)).

Petitioner has the burden to persuade us that Carnevali 1, Carnevali 2, and Carnevali 3 are invalidating prior art. We make our decision on institution based on whether the information presented in the petition and that patent owner’s preliminary 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(a). “In an *inter partes* review, the burden of persuasion is on the petitioner to prove ‘unpatentability by a preponderance of the evidence,’ . . . and that burden never shifts to the patentee.” *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (quoting 35 U.S.C. § 316(e)). The burden of production can shift to the patent owner, however. *See id.* at 1379. This shift happens where it is “warranted because the patentee

affirmatively seeks to establish a proposition not relied on by the patent challenger and not a necessary predicate for the unpatentability claim asserted—effectively, an affirmative defense.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1376 (Fed. Cir. 2016).

Here, Petitioner asserts that Carnevali 1, Carnevali 2, or Carnevali 3 in combination with each of the AP Publications discloses each limitation of the challenged claims, and the ’492 application does not provide written description support for those same claims. Thus, Petitioner has the burden of persuasion, based on all of the evidence, on both of those assertions. *See Dynamic Drinkware*, 800 F.3d at 1378.

Petitioner contends that the ’492 application first introduced new matter related to the hard shell, but “the adapter is solely described as being attached to the flexible protective cover.” Pet. 5–6 (citing Ex. 1016, 1:26, 2:16–17, 9:11, 10:22–23, 15:1–12). According to Petitioner, “[t]he first and only disclosure of the adapter being ‘detachable from the hard shell’ appeared in dependent claims 3 and 12 of the ’662 Application filed on December 27, 2018, which element was ultimately moved into independent claims 1 and 10 of the ’334 patent.” *Id.* at 6 (citing Ex. 1024, 7:20–21, 48:31–49:1; Ex. 1001, claims 1, 10). Therefore, Petitioner contends, “the adapter is detachable from the hard shell” limitation “is added material new matter, which means all claims of the ’334 patent are limited to the priority date of their own application, i.e., December 27, 2018.” *Id.*

Patent Owner responds that “the Examiner at the Patent Office addressed whether the specification provides sufficient support for claims reciting an ‘adapter [that] is detachable from the hard shell,’ and allowed the claims in light of” portions of the specification cited by the applicant during prosecution. Prelim. Resp. 23. Patent Owner asserts that “[t]hose same

cited portions are disclosed in Carnevali 1, which was filed on June 29, 2015, and to which the '334 patent claims priority.” *Id.* (citing Ex. 1006 ¶ 166). Patent Owner argues that Petitioner does not address “the support cited in the prosecution history” or explain “why it believes that a person of skill in the art would disagree with the Examiner and find that the specification does not adequately support the claims.” *Id.* at 24. Patent Owner also argues that the claims “do not need to rely on the specific phrase ‘adapter is detachable from the hard shell’ for support because the priority applicants’ [*sic*, applications] disclosure of protective covers and shells along with their disclosures of fastened adapters adequately supports the claims of the '334 patent.” *Id.* at 24.

We are not persuaded, on this record, that Petitioner has met its burden of establishing that the “adapter is detachable from the hard shell” limitation is not supported by the '492 application. The '492 application describes a protective arrangement for an electronic device that includes both a flexible cover and a hard shell. The '492 application states that such an arrangement

includes a hard shell configured and arranged to be disposed around at least a portion of the electronic device and having an opening to allow access to an input/output socket of the electronic device; a flexible cover having a panel and a skirt surrounding the panel, where the panel and skirt form an interior cavity therebetween, and the skirt forming a mouth opening that communicates with the interior cavity that is configured and arranged to receive the electronic device disposed in the hard shell; and an adapter fixedly positioned in the flexible cover and including a male plug having connectors extending into the interior cavity of the flexible cover in an arrangement for mating with the input/output socket of the device through the opening in the hard shell and a contactor

having contacts adjacent outwardly from the flexible cover and electrically coupled to one or more connectors of the plug.

Ex. 1016, 2:10–20. The '492 application teaches that the adapter “is either over molded, bonded or fastened through” the side skirt of the flexible cover. *Id.* at 10:22–23. The hard shell “includes openings through which portions of the flexible cover . . . are accessible or protrude.” *Id.* at 38:10–11. In particular, the hard shell includes an opening through which a portion of the adapter of the flexible cover “protrudes or is accessible for connection to a docking cradle or other device.” *Id.* at 38:11–14.

The '492 application also teaches that, “[i]n alternative embodiments, the electronic device can be inserted into a hard shell and then the device and hard shell can be inserted into” a flexible cover, or “a hard shell can be provided as a removable (or permanent) liner for” the flexible cover. *Id.* at 38:25–28. The embodiments also “include an opening through which the male plug” of the adapter can protrude to allow the connection of the input/output socket of the electronic device to the male plug of the adapter. *Id.* at 38:28–31.

Additionally, during prosecution of the '334 patent, the applicant identified a portion of the '662 application as support for the “adapter is detachable from the hard shell by a user” limitation that originally appeared in dependent claims 3 and 12. Ex. 1002, 358–359. Specifically, the applicant identified the following, with reference to the embodiment depicted in Figures 50A and 50B:

In the illustrated embodiment, the hard shell 500 includes openings through which portions of the flexible cover, or skin, 100 are accessible or protrude. For example, the hard shell 500 includes an opening 514 through which a portion of the adapter 114 (such as nesting feature 159 or the contactor 120) of the

cover 100 protrudes or is accessible for connection to a docking cradle or other device.

Ex. 1024, 40:15–19. The '492 application also includes this passage.

Ex. 1016, 38:10–14.

These disclosures in the '492 application indicate that the adapter may be detachable from the flexible cover (i.e., “fastened through” the side) or may be molded in or bonded to the flexible cover. Ex. 1016, 10:22–23. They also indicate that the electronic device can first be inserted into a hard shell that is then inserted into the flexible cover (*id.* at 38:25–28), or that the electronic device can first be inserted in the flexible cover, which is then surrounded by the hard shell (*id.* at 37:25–31). And the '492 application provides that the hard shell includes an opening through which at least a portion of the adapter is accessible. *Id.* at 38:10–14, 38:28–31. Taken together, these disclosures at least appear to support the detachability of the adapter from the hard shell.

On this record, Petitioner does not adequately explain why the disclosures in the '492 application “do not convey with reasonable clarity to those skilled in the art” that the inventor was in possession of an adapter that is detachable from the hard shell as of the filing date of the '492 application. *PowerOasis*, 522 F.3d at 1306. Notably, Petitioner does not address the portion of the specification that the applicant identified during prosecution of the '334 patent as providing support for the “adapter is detachable from the hard shell” limitation of the challenged claims. Pet. 5–6, 13–14; Ex. 1024, 40:15–19; Ex. 1016, 38:10–14. Instead, Petitioner merely argues that the phrase “the adapter is detachable from the hard shell” appeared for the first time in the claims of the '334 patent. Pet. 6. An adequate description, however, does not require any particular form of disclosure, or

that the specification recite the claimed invention *in haec verba*. See *Ariad*, 598 F.3d at 1351.

Moreover, in evaluating the sufficiency of the disclosure, we may consider “the existing knowledge in the particular field, the extent and content of the prior art, the maturity of the science or technology, [and] the predictability of the aspect at issue.” *Capon v. Eshhar*, 418 F.3d 1349, 1359 (Fed. Cir. 2005) (cited with approval in *Ariad*, 598 F.3d at 1352); see also *Boston Sci. Corp. v. Johnson & Johnson*, 647 F.3d 1353, 1366 (Fed. Cir. 2011) (holding that because the assessment for written description is made from the perspective of a person of ordinary skill in the art, in some instances, a patentee can rely on information that “well known in the art” to satisfy written description). For purposes of this Decision, we agree with Petitioner that a person of ordinary skill in the art would have had (1) a Bachelor’s Degree in mechanical engineering (or a related discipline) and two years of experience in the design or development of interlocking products such as docking cradles and adapters for portable electronic devices, or (2) five years of experience in the design or development of interlocking products. Pet. 10 (citing Ex. 1010 ¶¶ 22–23, 65–66). In light of this level of skill in the art, Petitioner does not persuade us that such a person would not have understood that the ’492 application adequately describes an adapter that is detachable from the hard shell, as required by the claims of the ’334 patent.

It is Petitioner’s burden to persuade us that Carnevali 1, Carnevali 2, and Carnevali 3 are qualified as prior art. Upon review of the disclosures in the ’492 application, and Petitioner’s arguments and the evidence of record, we are not persuaded that Petitioner adequately establishes that the challenged claims lack support in the ’492 application (as evidenced by

Carnevali 1). Accordingly, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that the challenged claims are not entitled to the benefit of the '492 application's filing date.

2. Claims 1–3, 7–11, and 14–18

Based on the arguments and evidence in the Petition and the Preliminary Response, and the evidence of record, we are not persuaded that Petitioner adequately establishes that Carnevali 1, Carnevali 2, and Carnevali 3 are prior art to the '334 patent. Therefore, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that the subject matter of claims 1–3, 7–11, and 14–18 would have been obvious over the combined teachings of Carnevali 1, Carnevali 2, or Carnevali 3 and each of the AP Publications.

E. Anticipation by Kim

Petitioner contends that claims 1–3, 10, 11, 14, and 15 are anticipated by Kim. Pet. 46–59.

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. 1004 ¶ 1. Figure 1 of Kim is reproduced below.

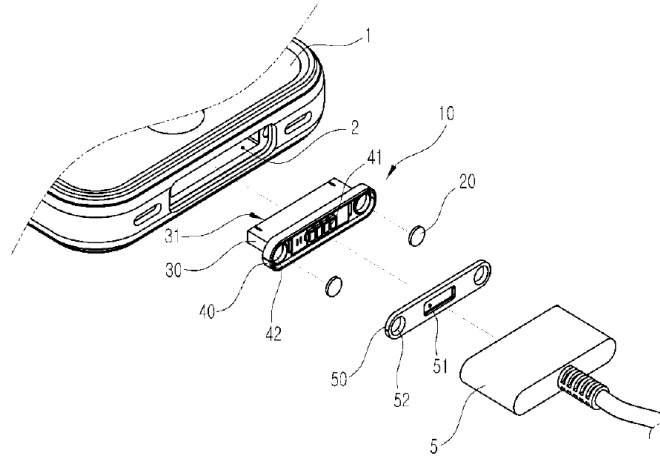


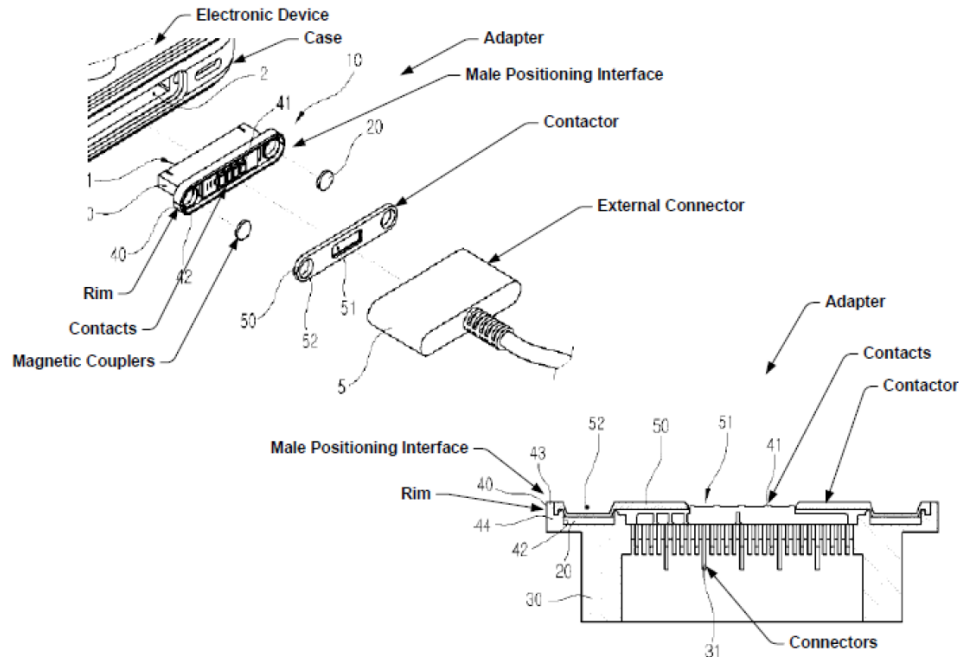
Figure 1 is an exploded perspective view illustrating a state where the coupler described in Kim is coupled to an electronic device and a connector, and depicts electronic device 1, coupler 10, magnetic couple 20, cap 50, and connector 5 as separate pieces aligned as they would be before being connected 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 1–3*

Petitioner contends that Kim discloses all of the elements of claim 1. Pet. 49–53. 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,” and “a contactor 50 having a plurality of contacts 41 that engage corresponding contacts 6 of the external connector 5.” *Id.* at 49 (citing Ex. 1004 ¶¶ 42–46, 59, Figs. 1, 3B, 5, 6). Petitioner further contends that contacts 41 are coupled to electronic device 1 by connectors 31. *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.



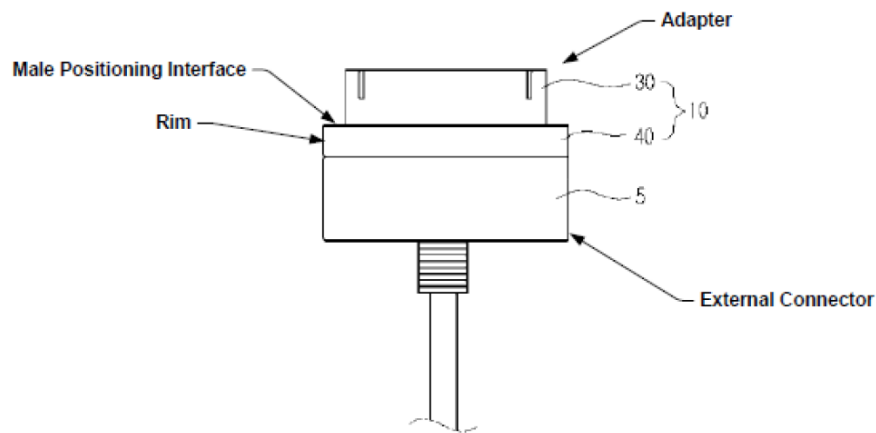
(Ex. 1004 Figs. 1,6)(annotations added).

Figure 1³ 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. 50. Petitioner also includes arrows pointing at the portion of coupler 10 to which cap 50 is attached labeled “Male Positioning Interface,” an arrow pointing at the top left side of coupler 10 between base 40 and mounting groove 42 labeled

³ 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. 50, Fig. 1, with Ex. 1004, Fig. 1 (reproduced in Section E.1, *supra*).

“Rim,” and an arrow pointing the bottom right corner of the electronic device labeled “Case.” *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. 50–51.



(Ex. 1004 Fig. 4)(annotations added).

Figure 4 is a perspective view of a coupled state of coupler 10 to connector 5. Ex. 1004 ¶ 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. 51.

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 includes a rim that surrounds and is in contact with a perimeter of the contactor 50.” Pet. 50. 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. 50. 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. 1004 ¶¶ 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 will prevail in showing that claim 1, and claims 2 and 3 that depend directly therefrom, are anticipated by Kim.

3. Claims 10, 11, 14, and 15

Petitioner contends that Kim discloses “the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external contactor” limitation of claim 10 for the same reasons as set forth with respect to the similar limitation in claim 1. Pet. 56. For the reasons set forth in Section II.E.2 above with respect to claim 1, we are not persuaded that Petitioner demonstrates, on this record, that Kim discloses “the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external contactor” limitation of claim 10. Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner will prevail in showing that claim 10, and claims 11, 14, and 15 that depend directly therefrom, are anticipated by Kim.

F. Obviousness over Kim and Song

Petitioner contends that the subject matter of claims 1–3, 7–11, and 14–18 would have been obvious over the combined teachings of Kim and Song. Pet. 59–69. Petitioner relies on the Cameron Declaration in support of its contentions.

1. Overview of Song

Song is directed to a coupling jack that connects a handsfree to a cellular phone. Ex. 1005, 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 2.⁴ 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 phone is “automatically attached” to the magnet attached to the data connector jack on the handsfree. *Id.* In this way, Song explains, “the user can automatically couple the handsfree and the cellular phone conveniently without any separate coupling operation.” *Id.*

2. Claims 1–3 and 7–9

Petitioner relies on its argument that claim 1 is anticipated by Kim for most of the limitations of claim 1, and additionally argues “Kim may be further combined with Song to clearly show the recitations ‘wherein the hard

⁴ We refer to the page numbers added by Petitioner to the bottom right hand corner of Ex. 1005.

shell is configured so that the adapter extends out of the hard shell for mating with the external connector.” Pet. 62.

For the reasons set forth above with in Section II.E.2, we are not persuaded 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. Petitioner does not rely on Song to remedy this deficiency in Kim. *See* Pet. 62. Accordingly, we determine that Petitioner does not establish a reasonable likelihood that it would prevail in showing that independent claim 1, and claims 2, 3, and 7–9 that depend directly or indirectly therefrom, would have been obvious over the combined teachings of Kim and Song.

3. Claims 10, 11, and 14–18

Petitioner argues that “the recitations of Claim 10 are disclosed by Kim,” and that “if adapter 10 of Kim is replaced with the adapter B of Song, then Kim in view of Song clearly disclose ‘wherein the hard shell defines an opening through which the adapter protrudes when received by the hard shell’” as recited in claim 10. Pet. 67.

For the reasons set forth in Section II.E.2 above with respect to claim 1, we are not persuaded that Petitioner demonstrates, on this record, that Kim discloses “the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external contactor” limitation of claim 10. Petitioner does not rely on Song to remedy this deficiency in Kim. *See* Pet. 67. Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner will prevail in showing that claim 10, and claims 11 and 14–18 that depend directly or

indirectly therefrom, would have been obvious over the combined teachings of Kim and Song.

G. Obviousness over Kim, Song, and An 1

Petitioner contends that “Kim in view of Song discloses all limitations of claims 1, 2, 3, 10, 11, 14, and 15,” and An 1 further discloses an adapter attached to a hard shell. Pet. 71 (citing Ex. 1032, Fig. 1). Therefore, according to Petitioner, the combined teachings of Kim, Song, and An 1 teach the “wherein the adapter is detachable from the hard shell” limitations of independent claims 1 and 10. *Id.*

For the reasons set forth above with in Sections II.E.2, we are not persuaded 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 or “the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 10. *See also* Section II.E.3 (addressing claim 10). Petitioner does not rely on Song or An 1 to remedy this deficiency in Kim. *See* Pet. 67, 71–72. Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner will prevail in showing that independent claims 1 and 10, claims 2 and 3 that depend directly from claim 1, and claims 11, 14, and 15 that depend directly from claim 10, would have been obvious over the combined teachings of Kim, Song, and An 1.

H. Obviousness over Kim, Song, An 1, and An 2

Petitioner contends that claims 7–9 and 16–18 would have been obvious over the combined teachings of Kim, Song, An 1, and An 2. Pet. 73–75. In particular, Petitioner contends that “Kim in view of Song and

An 1 discloses all limitations of claims 1, 2, 3, 10, 11, 14, and 15,” and that “An 2 further discloses the docking cradle, external connector, and magnetic coupling limitations” of claims 7–9 and 16–18. *Id.* at 74–75.

For the reasons set forth in Section II.E.2, we are not persuaded 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 or “the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external connector” limitation of claim 10. *See also* Section II.E.3 (addressing claim 10). Because claims 7–9 ultimately depend from claim 1, and claims 16–18 ultimately depend from claim 10, they also include these limitations. Petitioner does not rely on Song, An 1, or An 2 to remedy these deficiencies in Kim. Pet. 67, 71–72, 74–75.

Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner will prevail in showing that claims 7–9 and 16–18 would have been obvious over the combined teachings of Kim, Song, An 1, and An 2.

I. Obviousness over Kim, Song, and Huang

Petitioner contends that claims 7–9 and 16–18 would have been obvious over the combined teachings of Kim, Song, and Huang. Pet. 75–81.

1. Overview of Huang

Huang “relates to a multifunction adapter device, in particular, to a housed adapter device that allows for the simultaneously placement of one or more mobile phones to perform charging and data signal transmission.”

Ex. 1009, 5:3–5.⁵ Huang explains that the primary purpose of the invention is to provide a multifunction adapter device that allows for one or more interchangeable connective socket plugs of various shapes to be snap-fitted into it, so that it is compatible with a wide range of mobile phone models. *Id.* at 6:6–10. Figure 3 of Huang is reproduced below:

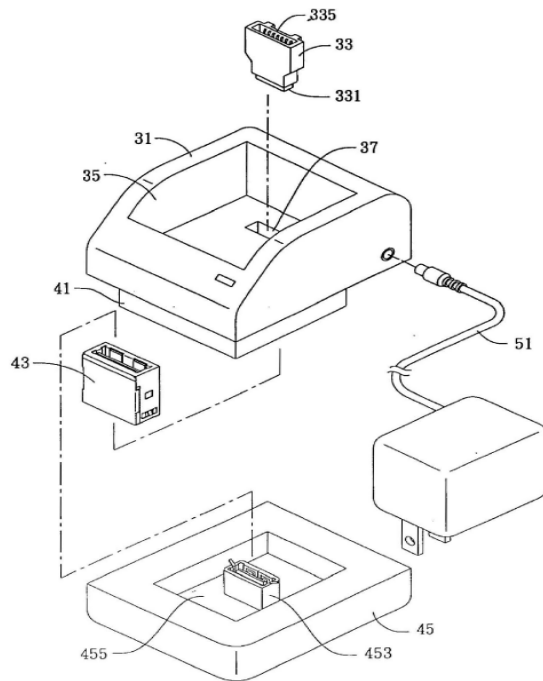


Fig. 3

Figure 3 is an exploded schematic depiction of the structure of one embodiment described in Huang. *Id.* at 8:34–35. Charging dock 31 has mobile phone holder slot 35 machined into the top surface for placement of a cellular phone or handset. *Id.* at 9:15–18. FPC-cable slot 37 is machined into mobile phone holder slot 35, and power supply unit 51 is connected to charging dock 31 to make the inside of FPC-cable slot 37 electrically conductive. *Id.* at 9:18–21. The bottom end of interchangeable conductive socket 33 is designed as FPC adapter 331 that plugs into FPC-cable slot in a

⁵ We refer to the page numbers added by Petitioner to the bottom-right side of the page.

tight-fitting, snap-fit manner. *Id.* at 9:21–23. When FPC adapter 331 is plugged into FPC-cable slot 37, an electrical connection is formed. *Id.* at 9:23–25. The tip of interchangeable connective socket 33 is designed to match the connective socket at the bottom of a mobile phone (not depicted) from various brands and models, and forms electrical plug 335 that correspondingly matches the connective socket at the bottom of the mobile phone. *Id.* at 9:26–29. When FPC adapter 331 of interchangeable connective socket 33 is plugged into FPC-cable slot 37, the mobile phone can be securely plugged into electrical plug 335 of interchangeable connective socket 33, so that once power supply unit 51 is connected to charging dock 31, it can immediately charge the mobile phone. *Id.* at 9:29–33.

Interface card mount 41, inside of which is male mount adapter 43 that can be electrically connected to FPC-cable slot 57, can be fixed to the bottom of charging dock 31. *Id.* at 9:34–36. Add-on function module 45, such as a data storage device, MP3 player, radio, CD player, or digital camera, “can be configured in the form factor of the interface card mount 41 with an interface card slot 455 machined into it.” *Id.* at 9:36–10:3. Female mount adapter 453 is fixed inside interface card mount 455 and can be snap-fitted to male mount adapter 43 to form an electrical connection, which enables two-way storage and execution actions between add-on function module 45 and the mobile phone. *Id.* at 10:3–11.

2. *Claims 7–9*

Petitioner contends that “Kim in view of Song discloses all of the limitations of claim 1,” and that Huang discloses “the additional limitations” of claim 7. Pet. 77. Petitioner contends that Huang discloses a docking cradle, a lower portion of which serves as a tray that engages and receives

the electronic device and the adapter of Kim in view of Song. *Id.* (citing Ex. 1009, Figs. 3, 5). Petitioner further contends that “[t]he adapter of Kim in view of Song would be modified so that the adapter would operates with the docking connector 37,43,453 of Huang.” *Id.* Petitioner also contends that Huang’s docking cradle includes a docking connector having a plurality of contacts positioned to connect with the corresponding plurality of contacts of the contactor of the adapter disclosed by Kim. *Id.* (citing Ex. 1009, Figs. 3, 5; Ex. 1004, Figs. 1, 6).

For the reasons set forth in Section II.E.2, we are not persuaded 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, from which claim 7 directly depends. Petitioner does not rely on Song or Huang to remedy this deficiency in Kim. Pet. 62, 76–78. Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner will prevail in showing that claim 7, and claims 8 and 9 that depend directly therefrom, would have been obvious over the combined teachings of Kim, Song, and Huang.

3. *Claims 16–18*

Petitioner contends that Kim in view of Song discloses all of the limitations of claim 10, from which claim 16 directly depends, and that, “[r]egarding the additional limitations of claim 16, Song and Huang disclose all of these additional recitations as described above with reference to claim 7.” Pet. 80. For the reasons set forth in Section II.E.3, we are not persuaded that Kim discloses “the male positioning interface defining a rim to guide proper mating of the contactor of the adapter to the external

connector” limitation of claim 10. Petitioner does not rely on Song or Huang to remedy this deficiency in Kim. Pet. 67, 79–80. Accordingly, we determine that the Petition does not establish a reasonable likelihood that Petitioner will prevail in showing that claim 16, and claims 17 and 18 that depend directly therefrom, would have been obvious over the combined teachings of Kim, Song, and Huang.

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 1–3, 7–11, and 14–18 of the ’334 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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