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Paper No. 60
Entered: May 10, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KINGSTON TECHNOLOGY COMPANY, INC.,
Petitioner,

v.

CATR CO. LTD.,
Patent Owner.

Case IPR2015-00559
Patent 6,926,544 B2

Before THOMAS L. GIANNETTI, BART A. GERSTENBLITH, and DAVID C. McKONE, *Administrative Patent Judges*.

GERSTENBLITH, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Kingston Technology Company, Inc. ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting institution of *inter partes* review of claims 1–7, 9, 10, 13–15, 17, 19, and 21–24 of U.S. Patent No. 6,926,544 B2 (Ex. 1001, "the '544 patent"). CATR Co. Ltd. ("Patent Owner") timely filed a

Preliminary Response (Paper 6, "Prelim. Resp."). Pursuant to 35 U.S.C. § 314, in our Decision to Institute, we instituted this proceeding as to claims 1, 2, 4, 5, 7, 9, 13, 14, 17, 19, and 21–24 of the '544 patent. Paper 7 ("Dec.").

After the Decision to Institute, Patent Owner filed a Patent Owner Response (Paper 26, "Resp."), and Petitioner filed a Reply to the Patent Owner Response (Paper 42, "Reply"). A consolidated oral hearing was held on December 14, 2015, in this matter and *Kingston Technology Co. v. CATR Co.*, IPR2015-00149. Paper 59 ("Tr.").

Petitioner relies on the testimony of Andrew Wolfe, Ph.D., (Ex. 1016, "Wolfe Declaration"; Ex. 1058, "Wolfe Reply Declaration"; Ex. 1064[1]) in support of its contentions. Patent Owner relies on the testimony of Professor Steven Carl Visser (Ex. 2013, "Visser Declaration") and Mr. Bruce W. Pearman (Ex. 2014, "Pearman Declaration") in support of its contentions.

We have jurisdiction under 35 U.S.C. § 6(c). This Decision is a final written decision under 35 U.S.C. § 318(a) as to the patentability of the challenged claims. Based on the record before us, we determine that Petitioner has demonstrated, by a preponderance of the evidence, that claims 9, 13, 14, 17, 19, and 21–23 are unpatentable, but Petitioner has not demonstrated, by a preponderance of the evidence, that claims 1, 2, 4, 5, 7, and 24 are unpatentable.

[1] Exhibit 1064 is called a "Correction to Reply Declaration of Andrew Wolfe (Ex. 1058)," whereby a correction is made to paragraph 15 of the Wolfe Reply Declaration.

B. Related Proceedings

The parties represent that the ’544 patent is asserted in the United States District Court for the Central District of California in *CATR Co. v. Kingston Technology Co.*, No. 8-14-cv-01352. Pet. 1–2; Paper 43, 2–3.

Petitioner also challenged several claims of the ’544 patent in IPR2015-00149 (“IPR 149”). In that proceeding, we issued a final written decision determining that Petitioner had demonstrated, by a preponderance of the evidence, that claims 8, 11, 12, 16, 18, and 20 of the ’544 are unpatentable. *Kingston Tech. Co. v. CATR Co.*, IPR2015-00149 (PTAB Apr. 14, 2016) (Paper 64) (“IPR 149 Decision”).

C. Real Parties-in-Interest

The Petition identifies Kingston Technology Company, Inc., as the real party-in-interest. Pet. 1. Patent Owner’s Updated Mandatory Notice identifies Pavo Solutions LLC and Golden Wave Partners Co. Ltd. as the real parties-in-interest. Paper 38, 2. Patent Owner indicates that the ’544 patent was assigned from Patent Owner to Pavo Solutions LLC and that Golden Wave Partners Co. Ltd. is the sole member of Pavo Solutions LLC.[2] *Id.*

[2] For the purposes of this Decision, however, we refer to CATR Co., Ltd., as Patent Owner.

D. The References

The references upon which we instituted review consist of the following:

U.S. Patent No. 6,480,390 B2, issued November 12, 2002 ("Matsumiya," Ex. 1003);[3]

U.S. Patent No. 6,829,672 B1, issued December 7, 2004 ("Deng," Ex. 1005);

U.S. Patent No. 6,522,534 B1, issued February 18, 2003 ("Wu," Ex. 1006);

U.S. Patent No. D199,589, issued November 17, 1964 ("Hoogesteger," Ex. 1008); and

U.S. Patent No. 6,019,238, issued February 1, 2000 ("Kindig," Ex. 1033).

[3] Matsumiya published as U.S. Patent Application Publication No. 2001/0017771 A1 on August 30, 2001 (Ex. 1004), and issued on November 12, 2002. Pet. 3. Matsumiya is prior art under 35 U.S.C. §§ 102(a) and (e), and the published application is prior art under §§ 102(a) and (b). *Id.* The parties' citations, however, are to Matsumiya (i.e., the issued patent) rather than the published application.

E. The Asserted Grounds of Unpatentability

We instituted this proceeding based on the following grounds of unpatentability:

References	Basis	Claims Challenged
Matsumiya and Deng	§ 103(a)	1, 2, 7, 9, 14, 17, 19, and 21–24
Matsumiya, Deng, and Kindig	§ 103(a)	4, 5, and 13
Wu and Hoogesteger	§ 103(a)	1, 2, 4, 5, 7, 9, 13, 14, 17, 19, and 21–24

F. The '544 Patent

The '544 patent is directed to a flash memory apparatus wherein a cover is not completely separated from the main body when in use so that loss of the cover is prevented. Ex. 1001, 1:8–11. The '544 patent explains that prior art flash memory apparatuses with a "separation type" cover can result in a user losing the cover. *Id.* at 2:11–15. An object of the invention is "to provide a flash memory apparatus having a single body type rotary cover, wherein a cover is not completely separated from the main body during use so that loss of the cover is prevented." *Id.* at 2:24–28.

Figure 2 is reproduced below:

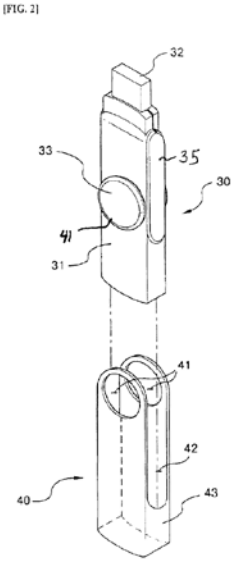
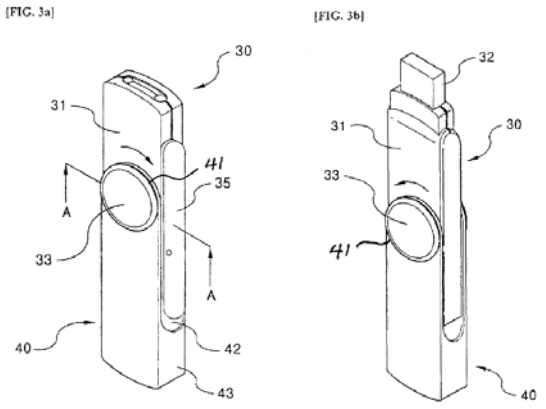


Figure 2 of the ’544 patent shows “an exploded, perspective view of a flash memory apparatus having a single body type, rotary cover.” *Id.* at 2:54–55.

To use the flash memory apparatus, a user holds cover 40 and rotates flash memory main body 30 in the arrow direction indicated in Figure 3a (shown below) so as to expose Universal Serial Bus (“USB”) terminal piece 32, as shown in Figure 3b (also shown below).



Figures 3a and 3b of the ’544 patent “are perspective views showing keeping and usage status, respectively, for a flash memory apparatus having a single body type rotary cover.” *Id.* at 2:57–59.

G. Illustrative Claims

Claims 1, 7, and 24 are the independent claims challenged in this proceeding. Claims 2, 4, and 5 depend, directly or indirectly, from claim 1. Claims 9, 13, 14, 17, 19, and 21–23 depend, directly or indirectly, from claim 8. Claims 1 and 7 are illustrative of the claimed subject matter and are reproduced below:

> 1. A flash memory apparatus comprising:
>
> a flash memory main body including a rectangular shaped case within which a memory element is mounted, an USB (Universal Serial Bus) terminal piece electrically connected with the memory element and installed at a front end of the case in a projecting manner, and a hinge protuberance formed on at least one side of the case; and
>
> a cover including pair of parallel plate members facing each other and spaced by an interval corresponding to the thickness of the case, the cover having an open front end and a closed rear end with a pair of lateral side openings; the parallel plate members having at least one hinge hole receiving the hinge protuberance on the case for pivoting the case with respect to the flash memory main body, whereby the USB terminal piece is received in an inner space of the cover or exposed outside the cover.

Ex. 1001, 4:42–59.

> 7. A flash memory apparatus comprising:
>
> a flash memory main body including a case within which a memory element is mounted, an USB (Universal Serial Bus) terminal piece electrically connected with the memory element and installed at a front end of the case in a projecting manner, and at least one first hinge element formed on at least one side of the case; and
>
> a cover including pair of parallel plate members facing each other and spaced by an interval corresponding to the thickness of the case, the cover having an open front end and a closed rear end with a pair of lateral side openings; the parallel plate members having at least one second hinge element

> cooperating with the first hinge element of the case for pivoting the case with respect to the flash memory main body, whereby the USB terminal piece is received in an inner space of the cover or exposed outside the cover.

Id. at 5:23–39. Independent claim 8 is directed to a flash memory apparatus, but does not recite a hinge protuberance or hinge element. *Id.* at 5:40–56. Independent claim 24 is directed to a flash memory apparatus comprising a flash memory main body including "a hinge element formed on at least one side of the case." *Id.* at 6:48–62.

II. CLAIM CONSTRUCTION

We interpret claims of an unexpired patent using the "broadest reasonable construction in light of the specification of the patent in which [they] appear[]." 37 C.F.R. § 42.100(b); *accord In re Cuozzo Speed Techs. LLC*, 793 F.3d 1268, 1275–79 (Fed. Cir. 2015) ("Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA," and "the standard was properly adopted by PTO regulation"), *cert. granted sub nom. Cuozzo Speed Techs. LLC v. Lee*, 72016 WL 205946 (U.S. Jan. 15, 2016) (No. 15-446); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,764, 48,766 (Aug. 14, 2012) (Claim Construction). Claim terms are given their ordinary and customary meaning as would be 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. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In the Decision to Institute, we construed the claim terms reproduced in the table below:

Claim Term	Claim Construction in the Decision to Institute
"plate" (all challenged claims)	a thin, flat sheet or strip of metal or other material (Dec. 7)
"thickness" (all challenged claims)	the distance between opposite sides of something, distinct from width (Dec. 7)

In the Response and Reply, neither party disputes our constructions of "plate" and "thickness." We, therefore, use these constructions of "plate" and "thickness" for the reasons stated in our Decision to Institute.

Patent Owner proposes constructions for additional claim terms in the Response. Petitioner responds to Patent Owner's constructions in its Reply. In addition, Petitioner asserts that Patent Owner has waived the opportunity to propose constructions for additional terms by not setting forth such constructions prior to institution. Reply 3 (citing *Silicon Motion Tech. Corp. v. Phison Elecs. Corp.*, IPR2013-00473, slip op. at 3 (PTAB Apr. 8, 2014) (Paper 14)). We do not agree. Under our rules, a patent owner's preliminary response is optional (*see* 35 C.F.R. § 42.107(a)), and, therefore, there is no waiver if a patent owner proposes constructions for terms in its response. Nor is there wavier when, as here, a patent owner chooses to file a preliminary response and yet proposes that additional terms be construed in a patent owner response.[4] Accordingly, we address Patent Owner's newly proposed constructions below.

[4] Petitioner's citation to *Silicon Motion Technology* is inapposite as the remarks therein were directed to a petitioner who had proposed additional terms for construction in a request for rehearing of an institution decision.

A. "a pair of parallel plate members"

Each of the challenged claims recites the phrase "a pair of parallel plate members." *See, e.g.*, Ex. 1001, 4:50 (claim 1); *id.* at 5:30 (claim 7); *id.* at 6:54 (claim 24). In our Final Written Decision in IPR 149, we construed "a pair of parallel plate members" to mean "a pair of thin, flat sheets or strips of metal or other material in a parallel configuration." IPR 149 Decision 10. The parties raise the same arguments and provide the same evidence here, with respect to the construction of this phrase, as they did in IPR 149. Accordingly, for the reasons set forth in our Final Written Decision in IPR 149, we adopt the same construction here. *Id.* at 8–10.

B. "open front end" / "closed rear end"

Each of the challenged claims recites "the cover having an open front end," and each of the challenged claims, with the exception of claim 24, recites "a closed rear end." *See, e.g.*, Ex. 1001, 4:52–53 (claim 1); *id.* at 5:32–33 (claim 7); *id.* at 6:56–57 (claim 24). In our Final Written Decision in IPR 149, we construed "open front end" to mean "that the plates are not fixed together at that end," and we construed "closed rear end" to mean "that the plates are fixed together at that end." IPR 149 Decision 12. Additionally, we stated:

> [T]he claim language and specification use the terms to describe the structure of the cover and that description does not change after the flash memory main body is inserted. In other words, insertion of the flash memory main body in the open front end such that hinge protuberances 33 extend through hinge holes 41, thereby joining the plates (via the flash memory main body) at their open front end, does not result in the cover no longer having an open front end.

Id. The parties raise the same arguments and provide the same evidence here, with respect to the construction of these phrases, as they did in IPR

149. Accordingly, for the reasons set forth in our Final Written Decision in IPR 149, we adopt the same constructions here. *Id.* at 10–12.

C. "hinge protuberance"

Claim 1 and claims 2, 4, and 5, which depend therefrom, recite "a *hinge protuberance* formed on at least one side of the case." Ex. 1001, 4:47–48 (claim 1) (emphasis added). Claims 13 and 14, based on their dependency from claim 11, include the recitation "wherein the cover and case are hinged by a *hinge protuberance* on at least one side of the case and at least one hinge hole in one of the parallel plate members that receives the hinge protuberance." Ex. 1001, 6:5–8 (claim 11) (emphasis added). In our Final Written Decision in IPR 149, we construed "hinge protuberance" to mean a "hinging structure that bulges out, protrudes, or projects, beyond the surrounding surface." IPR 149 Decision 15. The parties raise the same arguments and provide the same evidence here, as they did in IPR 149, with respect to the construction of this term. Accordingly, for the reasons set forth in our Final Written Decision in IPR 149, we adopt the same construction here. *Id.* at 11–15.

D. "hinge element"

Claim 7 recites "at least one first hinge element formed on at least one side of the case" (Ex. 1001, 5:28–29), and claim 24 recites "a hinge element formed on at least one side of the case" (*id.* at 6:52–53). Patent Owner contends that "[t]he phrase 'hinge element formed on at least one side of the case' should be interpreted to be a protuberance, and the other, cooperating hinge element should be interpreted to be a hole rotatably mating with the protuberance." Resp. 19. First, Patent Owner asserts that the '544 patent specification provides only one example of a "hinge element formed on at

least one side of the case," namely, that of a protuberance. *Id.* at 19–20. Second, Patent Owner contends that the hinge element and protuberance are equated in the prosecution history. *Id.* at 20 (citing Ex. 1002, 107). Third, Patent Owner asserts that "the term 'formed on' also connotes that the 'first hinge element' is of the protuberance type." *Id.* at 20–21. Further, in light of the specification's description of a hinge protuberance, Patent Owner argues that "none of . . . claims [1, 7, and 24] can be interpreted to include an axle as the 'protuberance.'" *Id.* at 21.

Petitioner contends (1) "protuberance" is not the broadest reasonable interpretation of a "hinge element," (2) Patent Owner fails to establish any disclaimer of claim scope that would warrant limiting "hinge element" to "protuberance," and (3) the term "defines," in the prosecution history, was used to indicate "a mapping for one of the embodiments – not unambiguously limiting the claim to only one embodiment." Reply 7. Petitioner asserts that Patent Owner's construction is "little more than an improper attempt to add the 'axle-less' negative limitation to the claims." *Id.*

We do not agree that the meaning of "hinge element" is limited to a "protuberance." First, the claim language "hinge element" is broader than "hinge protuberance" because the term "element" is broader than the term "protuberance." Also, other claims, e.g., claim 11, and the specification use the phrase "hinge protuberance." Accordingly, to give meaning to each term chosen by the patentee, absent a disclaimer or disavowal, "hinge element" ordinarily should be construed broader than "hinge protuberance."

Second, the phrase "hinge element" is not recited in the written description portion of the specification; it is only recited expressly in

claims 7 and 24. Instead, the specification refers to a "hinge protuberance" and a "hinge hole." *See, e.g.*, Ex. 1001, 3:23 ("hinge protuberance"), 3:34–35 ("hinge hole"). Contrary to Patent Owner's argument, however, the specification uses the term "formed on at least one side of the case" to refer both to a hinge protuberance and a hinge hole, not solely to a protuberance. *See id.* at 4:26–28 ("Also, the hinge protuberance could be formed on the cover and the hinge hole could be *formed on* the flash memory main body." (emphasis added)).

Third, when claim 7 was added via amendment during the prosecution of the '544 patent application, the applicants stated the following in their "REMARKS": "New independent claim 7 *defines* each of the projections 33 as a first hinge element and each of the holes 41 as a second hinge element, the first and second hinge elements cooperating for pivoting the case 30 within the cover 40." Ex. 1002, 107 (emphasis added). Patent Owner's interpretation would read the first part of the sentence as though it were written as: a first hinge element is defined as a projection and a second hinge element is defined as a hole. The sentence, however, states that the *claim* defines a projection as a first hinge element, not the other way around. The most reasonable interpretation is *not* that the patentee was attempting to define the terms "first hinge element" and "second hinge element," nor is the most reasonable interpretation that the applicants' remarks were a clear and unmistakable disclaimer or disavowal of claim scope. *See, e.g.*, *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (discussing disclaimers). Accordingly, the broadest reasonable interpretation of "hinge element" encompasses at least a hinge protuberance and a hinge hole.

E. "on at least one side of the case"

Claims 13 and 14 depend from claim 11. Ex. 1001, 6:12, 18. In the Final Written Decision in IPR 149, we discussed the meaning of the phrase "on at least one side of the case," as recited in claim 11. IPR 149 Decision 15–21. In that case, we found that

> the specification and claims of the '544 patent use the phrase "hinge protuberance formed on at least one side of the case" to indicate integration or attachment of the protrusion, while they use the phrase "hinge protuberance on at least one side of the case" to indicate the relative position of the protrusion.

Id. at 21. The parties raise the same arguments and provide the same evidence here, as they did in IPR 149, with respect to the construction of the phrase "on at least one side of the case." We adopt the same construction and analysis from our Final Written Decision in IPR 149 for the reasons explained therein. We address the separate phrase, "formed on at least one side of the case," below.

F. "formed on at least one side of the case"

Claims 1, 7, and 24 recite a hinge protuberance or hinge element "formed on at least one side of the case." Ex. 1001, 4:47–48 (claim 1), 5:28–29 (claim 7), 6:52–53 (claim 24). Petitioner asserts that "formed on"

> has the same definition in the claims, simply another way of saying "on." However, it is undeniably slightly by lexicography narrower than "on," but as a practical matter it simply means that the protuberance is, again, formed on that side, without a requirement that it be integrally formed on that side.

Tr. 36:4–9. Patent Owner did not provide a construction for "formed on" that was different from "on," but counsel stated, at the oral hearing, that Patent Owner does not "object to having those claims limited to embodiments where it is integrally formed on." *Id.* at 63:16–21.

The phrase "formed on" is narrower than the term "on." First, as discussed above, claim 11 recites "a hinge protuberance on at least one side of the case," which suggests that when the patentee used the phrase "formed on" something different was intended beyond the meaning of simply "on."

Second, the specification indicates that the hinge protuberance "may be form[ed] integrally with the case" or "may be manufactured in form of a separate element so that the hinge protuberance 33 is assembled by means of an adhesive agent." Ex. 1001, 3:23–27. The specification recites the phrase "formed on" in several instances.[5] In describing the hinge protuberance as "form[ed] integrally with the case" or manufactured separately and assembled by means of an adhesive agent, the specification explains that "[t]he present embodiment shows the latter case." *Id.* at 3:26–27. In other words, the specification explains that the embodiment illustrated in the figures shows a hinge protuberance manufactured separately and assembled by means of an adhesive agent, but then refers to that same embodiment in

[5] *See, e.g.*, *id.* at 3:34–36 ("Adjacent to its open end the cover has a circular hinge hole 41 for receiving the hinge protuberance 33 *formed on* the flash memory main body 30." (emphasis added)); 4:26–32 ("Also, the hinge protuberance could be *formed on* the cover and the hinge hole could be *formed on* the flash memory main body. Furthermore, the hinge protuberance could be *formed on* only one side between the front and rear sides of the case, and also, only one hinge hole for receiving the hinge protuberance could be provided to the cover." (emphases added)).

The specification also uses the phrase "formed on" to describe joining protuberance 35 as well as hooking groove 34 and hooking threshold 45. *See* Ex. 1001, 3:27–30 ("Also, a closely joining protuberance 35 for fixing the cover 40 in a forcibly fitting manner upon storage as described in the following description is formed on one lateral side of the case 31."); 3:36–39 ("Furthermore, a hooking groove 34 is preferably formed on the lower periphery of the hinge protuberance 33. A hooking threshold 45 is hooked on the hooking groove 34 and is preferably formed on a rim . . . .").

the subsequent paragraph as having "hinge protuberance 33 *formed on* the flash memory main body 30." *Id.* at 3:35–36 (emphasis added). Thus, the specification at least identifies a hinge protuberance manufactured separately and assembled by means of an adhesive agent as one that is "formed on." Additionally, the specification supports a conclusion that the integrally formed embodiment also is encompassed within the meaning of a hinge protuberance "formed on" at least one side of the case.

In sum, the specification and claims of the '544 patent use the phrase hinge protrusion or hinge element "formed on at least one side of the case" to indicate both integration and attachment of the protrusion or element.

III. ANALYSIS

A. Obviousness Overview

Under 35 U.S.C. § 103(a), an invention is not patentable if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and, (4) where in evidence, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

1. Level of Ordinary Skill in the Art

In our Final Written Decision in IPR 149, we found "that one of ordinary skill in the art would have had a degree in mechanical engineering or industrial design, but also a general understanding of the use of electrical components, which may be incorporated in mechanical designs." IPR 149 Decision 23. The parties present the same arguments here, with respect to their views of the level of ordinary skill in the art, as they did in IPR 149. Accordingly, for the reasons discussed in our Final Written Decision in IPR 149 we adopt the same level of skill here. *Id.* at 22–23.

2. Objective Indicia of Nonobviousness

During the oral hearing, Patent Owner conceded that it had not proved objective indicia. Tr. 75:1–16 ("So we are conceding that we haven't proven our case on objective indicia. . . . So it is -- it is not relevant to moving forward.").

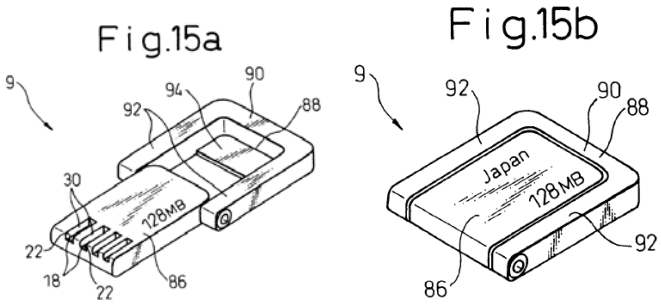
Accordingly, there is no argument regarding secondary indicia of nonobviousness before us.

B. Obviousness over Matsumiya and Deng

Petitioner asserts that the combination of Matsumiya and Deng would have rendered obvious the subject matter of claims 1, 2, 7, 9, 14, 17, 19, and 21–24 of the '544 patent to one of ordinary skill in the art at the time of the invention. Pet. 3.

1. Matsumiya

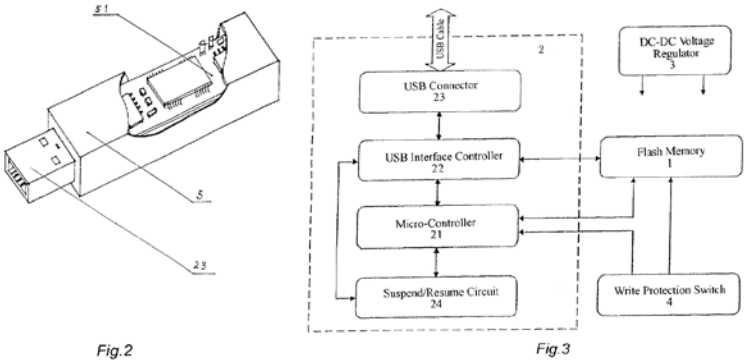
Matsumiya discloses a "card-type peripheral device with a connector element, the device comprising the function of shielding the contacts to prevent the accumulation of dust and dirt on the contacts when the device is not in use." Ex. 1003, 1:42–46. Figures 15a and 15b are shown below:



Figures 15a and 15b of Matsumiya "are perspective views schematically showing a card-type peripheral device . . . in which FIG. 15a shows the device in open state and FIG. 15b shows the device in closed state." *Id.* at 4:4–8.

2. Deng

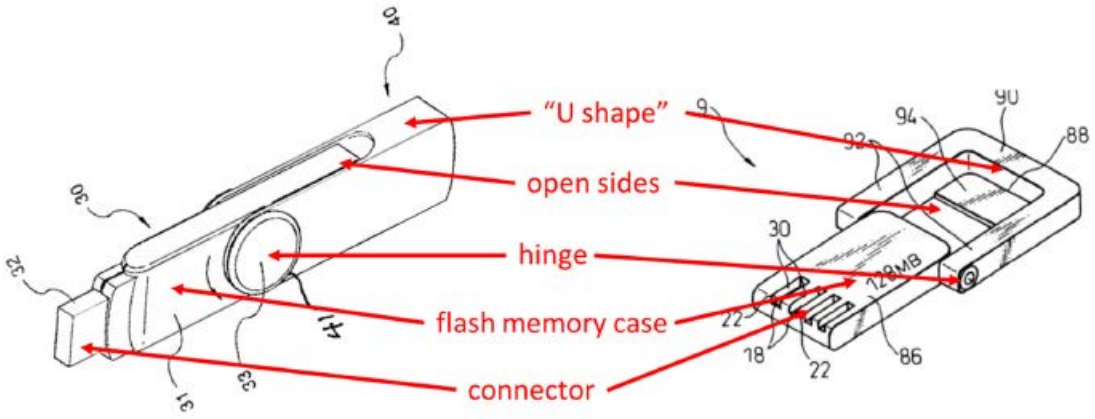
Deng discloses "an electronic flash memory external storage method[,]" including a flash memory device. Ex. 1005, 2:10–15. In particular, Deng teaches that the external storage device is implemented with a USB interface. *Id.* at 7:16–18. Figures 2 and 3 of Deng are shown below:



Deng's Figure 2 shows "a hardware section diagram of the electronic flash memory external storage device," and Deng's Figure 3 shows "the hardware block diagram of the electronic flash memory external storage device implemented with USB interface." *Id.* at 3:47–51.

3. Discussion

Petitioner contends that Matsumiya teaches a generic flash memory device, but not a USB device, while Deng discloses a USB flash memory storage device. Pet. 10. Petitioner asserts that Matsumiya discloses the structural features of the claims, but differs in dimensions and the type of electronic device included in the case. *Id.* at 9–10. Petitioner provides the following illustration identifying where several of the structural elements of the claims are taught by Matsumiya.



Petitioner's illustration shows a comparison between Figure 3b of the '544 patent and Figure 15a of Matsumiya, in which Petitioner identifies a "U shape," "open sides," "hinge," "flash memory case," and "connector." *Id.* at 9. Petitioner asserts that one of ordinary skill in the art "would have been motivated to use the swivel cover design of Matsumiya as shown in Figs 15a/b with Deng to protect the USB contacts of Deng." *Id.* at 12 (citing Ex. 1016 ¶¶ 71–75); *id.* at 11 ("One of ordinary skill upon reviewing Matsumiya would have understood the problem that dirt and dust accumulation (as well as damage) can cause deterioration of the electrical contacts on a memory device and would have understood the need and

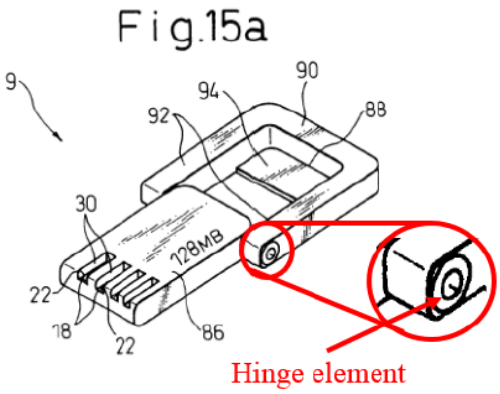
advantages of covering electrical contacts to avoid deterioration of those contacts." (citing Ex. 1016 ¶¶ 71–74)).

a. Claims 1, 2, 7, and 24

Independent claim 1 is directed to a flash memory apparatus comprising "a hinge protuberance formed on at least one side of the case." Ex. 1001, 4:47–48. Claim 2 depends from claim 1. Independent claim 7 is directed to a flash memory apparatus comprising "at least one first hinge element formed on at least one side of the case." *Id.* at 5:28–29. Independent claim 24 is directed to a flash memory apparatus comprising "a hinge element formed on at least one side of the case." *Id.* at 6:52–53.

Petitioner contends that Matsumiya discloses each of the above-recited elements of the claims. Pet. 16 (addressing this element of claim 1 and referring to it as claim element "1[E]"), 26 (addressing this element of claim 7 by referring to claim element 1[E][6]), 35 (addressing this element of claim 24 by referring to claim element 1[E]). In particular, Petitioner points to Matsumiya's disclosure that the cover is mounted on the housing "swingably about the forward end portions of the two arms 92." *Id.* at 16 (citing Ex. 1003, 12:44–46, Figs. 15a, 15b). Petitioner contends that Matsumiya "discloses a hinge element located on the outer part of arm 92" as shown in Petitioner's annotated version of Figure 15a below:

[6] Petitioner interchangeably refers to the element as "claim 1[E]" and "claim 1 (e)." *Compare* Pet. 16 *with id.* at 26. For consistency, we refer to it as claim element "1[E]."



Petitioner's annotated version of Matsumiya's Figure 15a is shown above, including an expanded view of the connection between one of Matsumiya's arms and the case, labeled as "Hinge element." *Id.* Petitioner further asserts:

> The ordinary artisan would have known from reviewing Figs. 15a and 15b and the '544 patent text describing the swinging movement of the cover "swingably mounted" to the case that Fig. 15a depicts a shaft that protrudes from each side of the case and extend[s] through holes in the arms 92 of the cover (as shown above).

Id. (citing Ex. 1003, 12:61–13:21; Ex. 1016 ¶¶ 96–97).

Patent Owner asserts that "[t]here is nothing in Matsumiya that teaches or suggests a 'hinge protuberance.'" Resp. 35 (citing Ex. 2013 ¶ 78). Rather, Patent Owner contends that "Matsumiya merely discloses a post or screw in a retainer that acts as an axle extending either partially or entirely through the housing 86 depending on whether the post or screw is configured as an axle or a split axle." *Id.* (citing Ex. 2013 ¶¶ 78–82).

In its Reply, Petitioner argues that "there is no evidence that Matsumiya requires an axle. The Matsumiya cover could also use a snap hinge." Reply 13 (citation omitted). Petitioner asserts that Patent Owner's expert, Professor Visser, conceded that a snap hinge is a hinge protuberance.

Id. (citing Ex. 1050, 127:9–11). Petitioner contends that even if an axle were used with Matsumiya, an axle would satisfy the broadest reasonable interpretation of "protuberance" because "[i]t would . . . protrude out of the case." *Id.* (citing Ex. 1058 ¶¶ 9–10).

Petitioner's arguments fail to account sufficiently for the presence of the claim phrase "formed on at least one side of the case." First, Petitioner's argument that Matsumiya discloses this element of the claims is based on its proposed construction of "formed on" as meaning "located on," in the general sense. *See* Pet. 16 (stating that "Matsumiya discloses a hinge element *located on* the outer part of arm 92" (emphasis added)). Additionally, although Petitioner states that Matsumiya's Figure 15a shows a "shaft that protrudes from each side of the case," *id.*, Petitioner makes no attempt to show that an alleged hinge element or hinge protuberance is integrated with or attached to at least one side of the case.

Second, Dr. Wolfe testified that Matsumiya discloses "a shaft" that protrudes from each side of the case. Ex. 1016 ¶ 97. On cross-examination, however, Dr. Wolfe admitted that while Matsumiya could disclose a "split axle," "normally, you'd presume that it's a through axle." Ex. 2012, 85:9–18. Dr. Wolfe did not explain in his direct testimony how either an axle or split axle would be integrated with or attached to at least one side of the case.

Third, Petitioner relied on the express disclosure of Matsumiya, not a modification of Matsumiya, as teaching this element of the claims. *See* Pet. 16 (relying only on Matsumiya's disclosure). In its Reply, Petitioner asserts, for the first time, that Matsumiya "could also use a snap hinge," pointing to Professor Visser's cross-examination testimony.

Reply 13 (citing Ex. 1050, 127:9–11). Professor Visser's testimony, however, does not support Petitioner's argument. Professor Visser testified that Matsumiya does not show a snap-on hinge, and that a snap-on hinge would not have the same functionality as an axle. Ex. 1050, 127:18–21. He also testified that the two concentric rings on the arms of Matsumiya are inconsistent with a snap-on hinge. *Id.* at 128:17–20. Thus, the issue before us is not whether it would have been obvious to modify Matsumiya to include a snap-on hinge or hinge protuberance on the side of the case because that was not the basis set forth in the Petition and upon which we instituted review; rather, the issue is whether Petitioner has shown that Matsumiya discloses a hinge element or hinge protuberance integrated with or attached to at least one side of the case.

In light of the record before us, and as detailed in the discussion above, we conclude that Petitioner has not shown that Matsumiya discloses a hinge element or a hinge protuberance "formed on at least one side of the case." We find that Petitioner has failed to present sufficient evidence to show that Matsumiya discloses this element of the claims, and we find Patent Owner's evidence in the form of Dr. Wolfe's cross-examination testimony and Professor Visser's testimony more persuasive.

b. Claims 9, 17, 19, and 21–23

Claims 9, 17, 19, and 21–23 depend, directly or indirectly, from claim 8. Petitioner challenged the patentability of claim 8 based on the combined teachings of Matsumiya and Deng in IPR 149. Petitioner relies upon the same evidence here with respect to the elements that claims 9, 17, 19, and 21–23 have in common with claim 8. Pet. 8–35. Additionally, Petitioner identifies where Matsumiya discloses or would have rendered

obvious the additional elements recited by claims 9, 17, 19, and 21–23. *Id.* at 28–29 (claim 9), 31–32 (claim 17), 32 (claim 19), 33–34 (claim 21), 34 (claim 22), 35 (claim 23).

Patent Owner raises the same arguments and evidence directed to these claims as it did in IPR 149 with respect to claim 8. Resp. 27–34. Patent Owner does not, however, challenge the additional recitations of claims 9, 17, 19, and 21–23 beyond the elements they share with independent claim 8. *See* Resp. 27–39.

We expressly adopt our findings and analysis with respect to the elements of independent claim 8 as set forth in our Final Written Decision in IPR 149 for the reasons explained therein. IPR 149 Decision 26–33. Additionally, because claim 22 depends from claim 20, which depends from claim 8, we expressly adopt our findings and analysis with respect to the elements of claim 20 as set forth in our Final Written Decision in IPR 149 for the reasons explained therein. *Id.* at 37. Also, we expressly adopt our findings and analysis with respect to why one of ordinary skill in the art would have been prompted to use the swivel cover design of Matsumiya with Deng as set forth in our Final Written Decision in IPR 149 for the reasons explained therein. *Id.* at 37–40.

As noted above, Patent Owner does not challenge Petitioner's arguments that the additional language of claims 9, 17, 19, and 21–23 is either taught by Matsumiya and Deng or would have been obvious to one of ordinary skill in the art at the time of the invention. Thus, any argument for the patentability of those claims beyond the arguments raised with respect to claim 8 are waived. Paper 8, 3. Nonetheless, we have reviewed Petitioner's

arguments and evidence, discussed above, and we find them persuasive with respect to claims 9, 17, 19, and 21–23.

c. Claim 14

Claim 14 depends from claim 11, which recites "wherein the cover and case are hinged by a hinge protuberance on at least one side of the case and at least one hinge hole in one of the parallel plate members that receives the hinge protuberance." Ex. 1001, 6:5–8. Claim 11 depends from claim 8. Petitioner challenged the patentability of claim 8 based on the combined teachings of Matsumiya and Deng in IPR 149. Petitioner relies upon the same evidence here with respect to the elements that claim 14 has in claim 8. Pet. 29–31. Additionally, Petitioner identifies where Matsumiya discloses or would have rendered obvious the additional elements recited by claim 14. *Id*. at 31. Patent Owner raises the same argument as it did in IPR 149—that Matsumiya does not teach or suggest a hinge protuberance. *See* Resp. 35–40.

In our Final Written Decision in IPR 149 we addressed Petitioner's arguments and evidence in support of finding claim 11 unpatentable and Patent Owner's arguments and evidence in opposition. We determined that Petitioner had shown that Matsumiya discloses a "hinge protuberance on at least one side of the case" because "Figure 15a teaches that a hinge protuberance extends from the side of the case and into each of the arms of the cover" and, thus, the relative position of the protrusion is on the side of the case. IPR 149 Decision 35. Petitioner raises the same arguments and evidence here, with respect to the elements that claim 14 has in common with claim 11. Pet. 29–31. Accordingly, for the reasons set forth in our

Final Written Decision in IPR 149 (IPR 149 Decision 33–36), we find that Matsumiya discloses "a hinge protuberance on at least one side of the case."

Patent Owner does not challenge Petitioner's arguments directed to the additional language recited by claim 14. Thus, any separate argument for the patentability of claim 14 beyond the arguments raised with respect to claim 11 is waived. Paper 8, 3. Nonetheless, we have reviewed Petitioner's arguments and evidence discussed above, and we find them persuasive with respect to claim 14.

4. Conclusion of Obviousness

For the foregoing reasons, after consideration of the entire record, we conclude that Petitioner has not shown that the elements of claims 1, 2, 7, and 24 are taught by Matsumiya and Deng or would have been obvious in light of the combined teachings of those references. Thus, Petitioner has not shown, by a preponderance of the evidence, that claims 1, 2, 7, and 24 would have been obvious over Matsumiya and Deng.

We conclude also that Petitioner has shown that the elements of claims 9, 13, 17, 19, and 21–23 are taught by Matsumiya and Deng or would have been obvious in light of the combined teachings of those references. We also conclude that one of ordinary skill in the art would have been motivated to combine the teachings of the references for the reasons explained. Further, there are no arguments regarding secondary considerations of nonobviousness before us. Weighing all of the evidence, Petitioner has shown, by a preponderance of the evidence, that claims 9, 13, 17, 19, and 21–23 would have been obvious over Matsumiya and Deng.

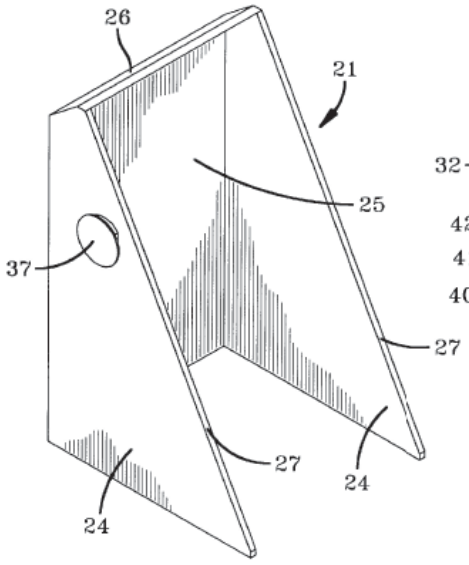
C. Obviousness over Matsumiya, Deng, and Kindig

Petitioner asserts that the combination of Matsumiya, Deng, and Kindig would have rendered obvious the subject matter of claims 4, 5, and 13 of the '544 patent to one of ordinary skill in the art at the time of the invention. Pet. 3. As noted above, claims 4 and 5 depend, directly and indirectly, from claim 1, which recites "a hinge protuberance *formed on* at least one side of the case." Ex. 1001, 4:47–48 (emphasis added). Petitioner does not assert that Kindig teaches the "formed on at least one side of the case" recitation from claim 1. Accordingly, for the reasons explained *supra* Section III.B.3.a., Petitioner has not shown that the combination of Matsumiya, Deng, and Kindig teaches or suggests "a hinge protuberance formed on at least one side of the case."

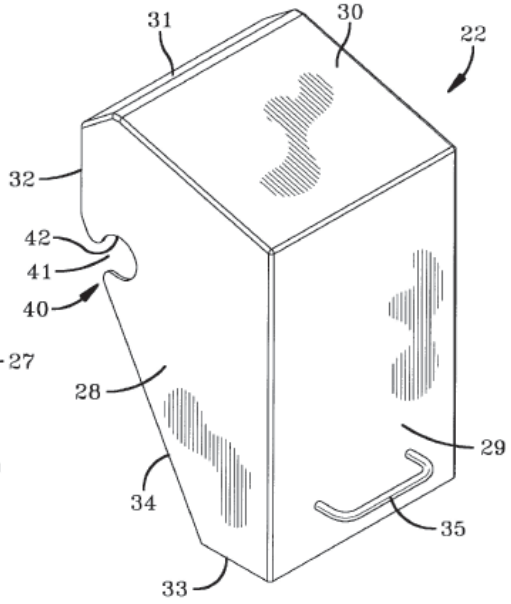
We discuss claim 13 below.

1. Kindig

Kindig is directed to "an enclosure having two components connected by a hinge assembly whereby the hinged connection can be readily disconnected to separate the components." Ex. 1033, 1:6–10. Figures 2 and 3 of Kindig are shown below.

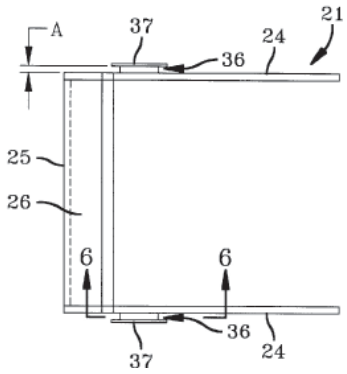


FIG–2



FIG–3

Kindig's Figures 2 and 3 show perspective views of the base component and cover component, respectively, of the enclosure. *Id.* at 2:21–24. Kindig's Figure 5 is shown below.



FIG–5

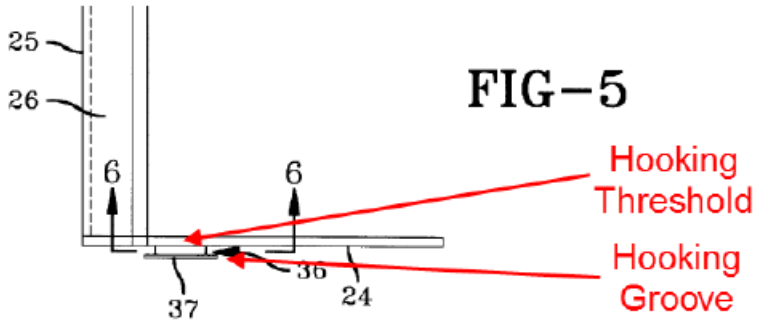
Kindig's Figure 5 shows a top plan view of the base component shown in Figure 2. *Id.* at 2:27–28. A hinge assembly 23 (not labeled) is formed on each side of the enclosure. *Id.* at 3:25–26. "Each hinge assembly 23 includes a lug, generally indicated by the numeral 36, extending outwardly from each side wall 24 of base component 21." *Id.* at 3:26–28. Kindig discloses that "[a] circular button 37 may be formed at the outer end of each

lug 36 and is thus spaced from side wall 24 by dimension A (FIG. 5)." *Id.* at 3:28–30.

2. Discussion

Claim 13 depends from claim 11 and further recites "wherein a hooking groove is formed on a lower periphery of the hinge protuberance and a hooking threshold for being hooked on the hooking groove upon joining of the hinge protuberance and the hinge hole, is formed on a lower portion of a rim confining the hinge hole." Ex. 1001, 6:12–17.

Petitioner contends that Kindig discloses the hooking groove and hooking threshold elements of claim 13, as shown below in Petitioner's annotated version of Kindig's Figure 5. Pet. 24.



Id. Petitioner asserts:

> It would have been obvious to one of ordinary skill in the art in view of Kindig to provide a hinge protuberance with a hinging groove (*i.e.*, a lip) to retain the connection between the case and the cover of Matsumiya because the groove of Kindig would advantageously help to retain connection between the cover of Matsumiya and the memory card.

Id. at 25. Petitioner contends:

> Alternatively, it would have been obvious to use a snap fit structure (in which the respective structures of the shaft and the hole are mateably formed) or similar mateable structures as recited in Claim 4 to mate the case and cover of Matsumiya at

> least because the use of hinging grooves were well known to those of ordinary skill in the art and would have further prevented loss of the cover through accidental detachment.

Id. at 25–26.

As noted above, claim 13 depends from claim 11, which depends from claim 8. Patent Owner asserts that Kindig fails to cure the alleged deficiencies in Matsumiya and Deng as applied to claims 8 and 11. Resp. 40–41. Patent Owner's argument is premised upon the assumption that we agreed with Patent Owner's interpretation of Matsumiya and Patent Owner's proposed construction of the phrase "on at least one side of the case." We have not. Accordingly, there are no deficiencies in the teachings of Matsumiya and Deng as applied to claim 13 based on its dependency from claims 8 and 11.[7]

As to Petitioner's contention that Kindig teaches the additional limitations of claim 13, Patent Owner contends that Kindig is non-analogous art. Resp. 41–44. "A reference qualifies as prior art for an obviousness determination under § 103 only when it is analogous to the claimed invention." *In re Klein*, 647 F.3d 1343, 1348 (Fed. Cir. 2011) (citing *Innovention Toys, LLC v. MGA Entm't., Inc.*, 637 F.3d 1314, 1321 (Fed. Cir. 2011), and *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004)).

> Two separate tests define the scope of analogous art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field

[7] Patent Owner acknowledges that the Petition does not rely upon Kindig as disclosing the hinge protuberance and hinge hole elements of the claims, but challenges whether Kindig discloses a "hinge hole." Resp. 41. Petitioner relies upon Matsumiya as disclosing the recited hinge hole of claims 11 and 13, and, therefore, Patent Owner's argument regarding Kindig does not respond to the specific arguments before us. Pet. 29–30.

> of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.

Id. (quoting *In re Bigio*, 381 F.3d at 1325).

Patent Owner asserts that Kindig "satisfies neither test." Resp. 43. With respect to the first test, Patent Owner contends that the field of endeavor of the '544 patent is "portable, hand-held memory devices," "like that of Matsumiya and Deng," whereas Kindig's field of endeavor is "an enclosure for a blender." *Id.* (citing Ex. 2013 ¶ 94; Ex. 2014 ¶ 35). With respect to the second test, Patent Owner asserts that we correctly identified the particular problem with which the inventor of the '544 patent was involved in our Decision to Institute—"the problems associated with the loss of a protective cover for a flash memory device." Resp. 43 (quoting Dec. 27). Patent Owner contends that Kindig "teaches a hinged connection that can be readily disconnected to separate the components" (*id.* (quoting Ex. 2013 ¶ 97)), and, thus, "Kindig is the antithesis of the '544 Patent in this key respect; Kindig's design creates the exact problem that the '544 Patent aims to solve" (*id.* at 44 (citing Ex. 2013 ¶ 97; Ex. 2014 ¶ 35)).

Petitioner contends that Kindig is directed to the same field of endeavor as the '544 patent—"rotary covers for electrical devices, such as a memory device"—and that Patent Owner is "wrong to limit the field of endeavor to solely memory devices." Reply 16 (citing Ex. 1058 ¶¶ 24–25). Additionally, Petitioner asserts that "even if Kindig were outside the field of endeavor, one of ordinary skill would certainly believe that hinged cover designs for other sensitive electrical devices were pertinent to hinged cover design." *Id.* (citing Ex. 1058 ¶¶ 24–25). Petitioner contends that Patent Owner's argument regarding removability of the cover "would not have

caused one of ordinary skill to not consider Kindig pertinent." *Id.* (citing Ex. 1058 ¶¶ 24–25).

Kindig is directed to a hinge assembly for an enclosure that may be used to house a blender or a food processor to deaden the noise emanating therefrom. Ex. 1033, 1:5–7 ("This invention relates to an enclosure, for example, of the type which might be utilized to house a blender or a food processor to deaden the nose emanating therefrom." (emphasis added)). Kindig states: "More particularly, this invention relates to an enclosure having two components connected by a hinge assembly whereby the hinged connection can be readily disconnected to separate the components." *Id.* at 1:7–11. Kindig explains:

> Innumerable types of cabinets or enclosures are known in the art. Some such cabinets, for example, are utilized to house electronic stereo equipment or the like. Recently similar cabinets have been utilized to house the typical electric blender so that when the blender is in operation, the noise emanating therefrom will be muffled. Such is particular, desirable when the blender is being operated in a commercial environment, such as a restaurant, so that the patrons are not annoyed by the sound of a blender processing a beverage.

Id. at 1:14–23. Accordingly, we find that Kindig's field of endeavor is hinged enclosures to house appliances that make noise when operated.

The '544 patent states that "[t]he present invention relates to a flash memory apparatus, and more particularly to a flash memory apparatus, wherein a cover is not completely separated from the main body upon being in use so that lost [sic] of the cover is prevented." Ex. 1001, 1:8–11. The '544 patent is largely directed to a cover that rotates with respect to a case (as is evident from the parties', and consequently our, extensive discussion of the hinged connection (i.e., hinge protuberances and hinge holes)), but is

not readily disconnected. In fact, the '544 patent discloses the recited "hooking groove" and "hooking threshold" specifically to prevent the hinge hole from being easily detached from the hinge protuberance. *Id.* at 3:36–43 ("Furthermore, a hooking groove 34 is preferably formed on the lower periphery of the hinge protuberance 33. A hooking threshold 45 is hooked on the hooking groove 34 and is preferably formed on a rim confining the hinge hole 41 in order to prevent the hinge hole 41 from being easily detached from the hinge protuberance 33 after joining of the hinge hole 41 and the hinge protuberance 33."). Thus, we find that the '544 patent's field of endeavor is hinge assemblies for a flash memory apparatus.

In light of the above discussion, we find that Kindig is not within the same field of endeavor as the '544 patent. Although Kindig and the '544 patent have different fields of endeavor, we consider whether Kindig still is reasonably pertinent to the particular problem with which the inventor of the '544 patent is involved.

In the context of such enclosures for appliances, Kindig notes that prior arrangements with permanently hinged covers are convenient compared to those with covers that merely lift off. Nevertheless, the permanent hinge arrangements made cleaning the enclosure and placing items into the enclosure more difficult. Ex. 1033, 1:24–32. Kindig states that "the need exists for an enclosure which has its cover and base components hinged together for convenient operation, and yet which can have the hinged connection readily disconnected for easier access to the inside of the enclosure." *Id.* at 1:33–37. Accordingly, the problem to which Kindig is directed is how to enclose an object with an enclosure that is

hinged together but that allows disconnection of the components of the enclosure to access the inside of the enclosure. *See id.*

The '544 patent is directed to a flash memory apparatus having a single body type rotary cover. Ex. 1001 [54]. The '544 patent states: "The present invention relates to a flash memory apparatus, and more particularly to a flash memory apparatus, wherein a cover is not completely separated from the main body upon being in use so that lost [sic] of the cover is prevented." *Id.* at 1:8–11. In our Decision to Institute, we stated the following with respect to the particular problem to which the inventor of the '544 patent was directed: "The '544 patent is directed to the problems associated with the loss of a protective cover for a flash memory device. Ex. 1001, 2:24–28. In particular, the '544 patent explains that loss of the cover for a flash memory device can result in damage to the device. *Id.* at 2:19–21." Dec. 27. The parties do not challenge our identification of the problem to which the '544 patent inventor was directed and we adopt that finding here.

In light of the above discussion, we find that Kindig would not have logically commended itself to the attention of the '544 patent inventors. Accordingly, because Kindig is not within the same field of endeavor and is not reasonably pertinent to the particular problem to which the inventor of the '544 patent was directed, we find that Kindig is non-analogous art to the '544 patent.

Even if one of ordinary skill in the art were to have considered Kindig, however, Petitioner has not shown that Kindig discloses each of the elements of claim 13 or provided a reason with rational underpinning for the proposed combination. First, it is not clear from Petitioner's argument and

annotations of Kindig's Figure 5 where "a lower periphery of the hinge protuberance" and "a lower portion of a rim confining the hinge hole" are located such that we can ascertain whether the elements annotated disclose the recited "hooking groove" and "hooking threshold." *See* Pet. 24. Thus, we find that Petitioner has not shown that Kindig discloses each of the elements recited expressly by claim 13.

Second, Petitioner asserts that Kindig's hinge connection "would advantageously help to retain connection between the cover of Matsumiya and the memory card," *id.* at 25, but Petitioner has not shown that Matsumiya fails to retain the connection between case and cover or has difficulty doing so. Rather, from our review the record supports that Matsumiya's cover is securely attached to the case. Additionally, we are unaware of any teaching in Matsumiya of disconnecting the cover from the case. Similarly, the '544 patent aims to avoid disconnecting the cover from the case, as discussed above. Kindig, however, is directed to an easily detachable cover. Accordingly, Petitioner's reason—as to why one of ordinary skill in the art would have been prompted to modify Matsumiya by adding the elements of claim 13 from Kindig—lacks a rational underpinning.

3. Conclusion of Obviousness

For the foregoing reasons, after consideration of the entire record, we conclude that Petitioner has not shown that the elements of claims 4, 5, and 13 are taught by Matsumiya, Deng, and Kindig or would have been obvious in light of the combined teachings of those references. We conclude also that Petitioner has not shown that one of ordinary skill in the art would have been motivated to combine the teachings of the references for the reasons

explained. Further, there are no arguments regarding secondary considerations of nonobviousness before us. Weighing all of the evidence, Petitioner has not shown, by a preponderance of the evidence, that claims 4, 5, and 13 would have been obvious over Matsumiya, Deng, and Kindig.

D. Obviousness over Wu and Hoogesteger

Petitioner asserts that the combination of Wu and Hoogesteger would have rendered obvious the subject matter of claims 1, 2, 4, 5, 7, 9, 13, 14, 17, 19, and 21–24 of the '544 patent to one of ordinary skill in the art at the time of the invention. Pet. 4.

1. Wu

Wu is directed to "a housing structure of a memory device, and more particularly to a pen-type memory device which can be conveniently carried." Ex. 1006, 1:5–7. Figure 3 of Wu is shown below:

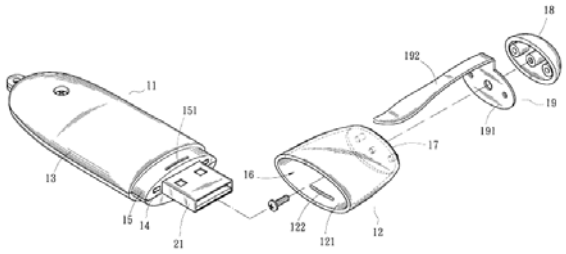
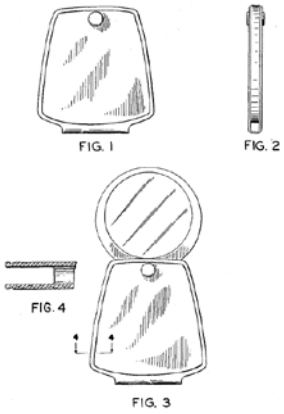


Fig. 3

Figure 3 of Wu shows a "perspective exploded view of the present invention." *Id.* at 2:16–17. Wu teaches that cartridge member 10 has chamber 11 and cap member 12 detachably fitted with chamber 11. *Id.* at 2:30–32. Wu further discloses that USB plug or interface 21 of memory unit 20 can extend through opening 14 out of chamber 11 for electrically connecting with a computer main frame. *Id.* at 2:36–38.

2. Hoogesteger

Hoogesteger is directed to an ornamental design for a hand magnifier. Ex. 1008, Title. Figures 1–4 of Hoogesteger are shown below:



Hoogesteger's Figure 1 shows "a top plan view of a hand magnifier in closed position," Figure 2 shows "a side view of said magnifier," Figure 3 shows "a bottom plan view of said magnifier wherein said magnifier is in an open position," and Figure 4 shows "a fragmentary sectional view taken on line 4—4 of FIG. 1." *Id.*

3. Discussion

Petitioner contends that Wu "discloses a conventional memory unit 20 having a USB interface 21. . . . [and] further disclose[s] USB flash device embodiments having various cap and body designs." Pet. 36 (citing Ex. 1006, 2:12–13, 2:32–38, Figs. 1, 2; Ex. 1016 ¶ 229). Wu further "explains that USB plugs can be easily damaged during carrying and describes '[a] hard plastic case . . . for enclosing the memory device and protecting the memory device . . . from being damaged during carriage." *Id.* (quoting Ex. 1006, 1:29–31) (citing Ex. 1016 ¶ 230). Petitioner asserts that Hoogesteger "discloses another prior art swivel cover design – namely a swivel cover for a magnifying glass." *Id.* at 37 (referring to Ex. 1008,

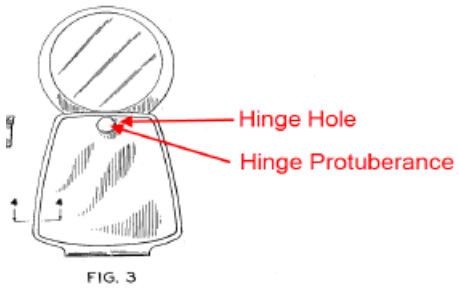
Figs. 1, 3, 4). Petitioner contends that one of ordinary skill in the art aware of the "dangers of leaving electrical contacts unprotected and knowing the cover design[] of . . . Hoogesteger . . . would have been motivated and had good reason to use a swivel cover design as taught by . . . [Hoogesteger] with Wu to protect the USB contacts of Wu." *Id.* at 39 (citing Ex. 1016 ¶¶ 237–240).

a. Claims 1, 2, 4, 5, 7, and 24

Independent claim 1 is directed to a flash memory apparatus comprising "a hinge protuberance formed on at least one side of the case." Ex. 1001:4, 47–48. Claims 2, 4, and 5 depend, directly or indirectly, from claim 1. *Id.* at 4:60 (claim 2), 5:5 (claim 4), 5:11 (claim 5). Independent claim 7 is directed to a flash memory apparatus comprising "at least one first hinge element formed on at least one side of the case." *Id.* at 5:28–29. Independent claim 24 is directed to a flash memory apparatus comprising "a hinge element formed on at least one side of the case." *Id.* at 6:52–53.

Petitioner contends that Hoogesteger discloses each of the above-recited elements of the claims. Pet. 41 (addressing this element of claim 1 and referring to it as claim element "1[E]" (citing Ex. 1016 ¶¶ 248–249)), 51 (addressing this element of claim 7 by referring to claim element 1[E][8]), 59 (addressing this element of claim 24 by referring to claim element 1[E]). In particular, Petitioner points to Hoogesteger's Figure 3 as shown in Petitioner's annotated version below:

[8] Petitioner interchangeably refers to the element as "claim 1[E]" and "claim 1 (e)." *Compare* Pet. 41 *with id.* at 51. For consistency, we refer to it as claim element "1[E]."



Petitioner's annotated version of Hoogesteger's Figure 3 is shown above, including Petitioner's annotations identifying an alleged "Hinge Hole" and "Hinge Protuberance." Pet. 41.

Patent Owner asserts that Hoogesteger discloses a "double-cap rivet" as the retention device that "extends through the cover and the magnifier holder." Resp. 48. Patent Owner contends that Hoogesteger's rivet is not integral with the case or adhered to the case; rather, the rivet is on the cover and not the lens holder. *Id.* at 49–50. Thus, Patent Owner argues that the rivet is not "formed on" at least one side of the case. *Id.*

In its Reply, Petitioner argues that "the rivet is located on and makes contact with the lens holder on the side." Reply 19. Petitioner contends that Patent Owner's argument "incorrectly assumes that the claim term 'on' requires more than simply being located on a particular side. . . . which it is in Hoogesteger." *Id.*

The difference in the parties' positions is based on their proposed constructions of the phrase "formed on at least one side of the case." In this instance, Petitioner has not presented persuasive evidence to show that Hoogesteger's rivet is "integrated or attached to at least one side of the case." To the contrary, we find that the rivet simply goes through the case, and is not integrated therewith or adhered to at least one side of the case. Further, Petitioner's position is not based upon whether it would have been

obvious to one of ordinary skill in the art to modify Hoogesteger's rivet in order to teach this element of the claims; rather, Petitioner's position is that Hoogesteger discloses a hinge protuberance or hinge element "formed on at least one side of the case." Pet. 41. Accordingly, for the reasons discussed above, we find that Hoogesteger does not disclose a hinge protuberance or hinge element[9] "formed on at least one side of the case."

b. Claims 9, 17, 19, and 21–23

Claims 9, 17, 19, and 21–23 depend directly or indirectly from claim 8. Petitioner challenged the patentability of claim 8 based on the combined teachings of Wu and Hoogesteger in IPR 149. Petitioner relies upon the same evidence here with respect to the elements that claims 9, 17, 19, and 21–23 have in common with claim 8. Pet. 36–58. Additionally, Petitioner identifies where Wu and Hoogesteger disclose or would have rendered obvious the additional elements recited by claims 9, 17, 19, and 21–23. *Id.* at 52–53 (claim 9), 55 (claim 17), 56 (claim 19), 57–58 (claim 21), 58 (claims 22 and 23).

Patent Owner raises the same arguments and evidence directed to these claims as it did in IPR 149 with respect to claim 8: (1) that "[t]he combination of Wu and Hoogesteger would have destroyed the intended functionality of Wu" (Resp. 44–46); (2) that "[t]he combination of Wu and

[9] Although we construed "hinge element" to encompass both a "hinge protuberance" and a "hinge hole," Petitioner's argument ties the first recited "hinge element" of claims 7 and 24 to Petitioner's argument based on the "hinge protuberance" recited in claim 1, not claim 1's "hinge hole." *See* Pet. 27 (referring to claim element "1 (e)" with respect to the first recited "hinge element" and referring to claim element "1 (i)" with respect to the second recited "hinge element); *id.* at 59 (same).

Hoogesteger fails to teach or suggest . . . 'an open front end'" (*id.* at 46–47); (3) that "[o]ne skilled in the art would not have thought to alter Wu based on Hoogesteger's teachings" and "would be discouraged from combining Wu and Hoogesteger" (*id.* at 47, 50–51); and that Wu and Hoogesteger "fail to teach or suggest . . . "pair of parallel plate members . . . being hinged to the case" (*id.* at 47–48). Patent Owner, however, does not challenge whether the combination of Wu and Hoogesteger teaches or suggests the additional elements recited by claims 9, 17, 19, and 21–23 beyond the elements they share with independent claim 8. *See* Resp. 27–39.

We expressly adopt our findings with respect to the elements of independent claim 8 as set forth in our Final Written Decision in IPR 149 and for the reasons explained therein. IPR 149 Decision 43–47. Additionally, because claim 22 depends from claim 20, which depends from claim 8, we expressly adopt our findings with respect to the elements of claim 20 as set forth in our Final Written Decision in IPR 149 for the reasons explained therein. *Id.* at 50–51. Also, we expressly adopt our findings with respect to why one of ordinary skill in the art would have been prompted to use the swivel cover design of Hoogesteger with Wu as set forth in our Final Written Decision in IPR 149 for the reasons explained therein. *Id.* at 51–52. As noted above, Patent Owner does not challenge Petitioner's arguments that the additional language of claims 9, 17, 19, and 21–23 is taught by the combination of Wu and Hoogesteger or would have been obvious to one of ordinary skill in the art at the time of the invention. Thus, any argument for the patentability of those claims beyond the arguments raised with respect to claim 8 are waived. Paper 8, 3. Nonetheless, we have reviewed Petitioner's

arguments and evidence discussed above, find them persuasive with respect to claims 9, 17, 19, and 21–23.

c. Claims 13 and 14

As noted above, claims 13 and 14 depend from claim 11, which depends from claim 8. Ex. 1001, 6:12 (claim 13), 18 (claim 14). Claim 11 recites "a hinge protuberance on at least one side of the case." *Id.* at 6:6–7. As noted above, claim 13 adds, *inter alia*, the limitations of a "hooking groove" and a "hooking threshold" to the elements of claim 11. *Id.* at 6:12–17. Claim 14 recites the apparatus of claim 11, "wherein a reception maintaining arrangement is provided on the flash memory main body and the cover and wherein when the USB terminal piece is received in an inner space of the cover, the main body is maintained within the inner space of the cover." *Id.* at 6:18–23.

Petitioner contends that Hoogesteger discloses the "hinge protuberance" element of claim 11, the "hooking groove" and "hooking threshold" elements of claim 13, as well as the additional elements of claim 14. Pet. 53–54 (incorporating argument for claim 13 from claim 4 and incorporating argument for claim 14 from claim 2). In particular, Petitioner points to Hoogesteger's Figure 3 as disclosing the "hinge protuberance," "hooking groove," and "hooking threshold," as shown in Petitioner's annotated version below:

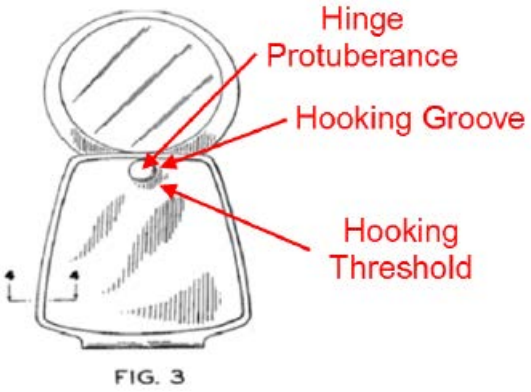


FIG. 3

Petitioner's annotated version of Hoogesteger's Figure 3 is shown above, including Petitioner's annotations identifying an alleged "Hinge Protuberance," "Hooking Groove," and "Hooking Threshold." Pet. 49.

Each of Patent Owner's arguments directed to claim 8 equally apply to claims 13 and 14 because each claim indirectly depends from claim 8. Additionally, Patent Owner argues that Hoogesteger does not disclose a "hinge protuberance on at least one side of the case," as recited by claim 11. Resp. 48–50. Patent Owner does not challenge Petitioner's argument and evidence that Hoogesteger and Wu disclose the additional limitations of dependent claims 13 and 14.

For the reasons we discussed above in the context of addressing claims 9, 17, 19, and 21–23, Patent Owner's arguments directed to claim 8 are not persuasive. Thus, we adopt our findings with respect to claims 9, 17, 19, and 21–23. Additionally, in our Final Written Decision in IPR 149, we addressed Patent Owner's argument that Hoogesteger does not disclose a hinge protuberance on at least one side of the case, and found it unpersuasive. We adopt the reasoning and findings of our Final Written Decision in IPR 149, including the finding that Hoogesteger discloses a hinge protuberance on at least one side of the case. IPR 149 Decision 47–49.

We have reviewed Petitioner's arguments and evidence with respect to the additional elements of claim 14, find them persuasive, and adopt them as our own. With respect to claim 13, however, Petitioner's annotations of Hoogesteger's Figure 3, shown above, fail to identify clearly where and how Hoogesteger's rivet meets the recited "hooking groove" and "hooking threshold" limitations. Petitioner states that "the hinge protuberance of Hoogesteger overlaps a hooking threshold of the Hoogesteger swivel case and joins the hinge protuberance extending from the magnifier assembly to the protective case. The hooking threshold is formed around the entire hinge hole, and is, thus on the lower portion." Pet. 49 (citing Ex. 1016 ¶ 273).[10] Petitioner does not point to any persuasive evidentiary support for this argument and we find none. Accordingly, we find that Petitioner has failed to identify a hooking threshold or hooking groove with sufficient specificity to show that Hoogesteger discloses these elements of claim 13 by a preponderance of the evidence.

4. Conclusion of Obviousness

For the foregoing reasons, after consideration of the entire record, we conclude that Petitioner has not shown that the elements of claims 1, 2, 4, 5, 7, 13, and 24 are taught by Wu and Hoogesteger or would have been obvious in light of the combined teachings of those references. We also conclude that Petitioner has shown that the elements of claims 9, 14, 17, 19, and 21–23 are taught by Wu and Hoogesteger or would have been obvious

[10] Dr. Wolfe's testimony is even more conclusory, stating simply "Hoogesteger discloses parallel plates being hinged to the magnifier using a hooking groove and a hooking threshold around the hinge hole in the configuration set forth in [the] claim . . . ." Ex. 1016 ¶ 273.

in light of the combined teachings of those references. Additionally, we conclude that one of ordinary skill in the art would have been motivated to combine the teachings of the references for the reasons explained. Further, there are no arguments regarding secondary considerations of nonobviousness before us. Weighing all of the evidence, Petitioner has not shown, by a preponderance of the evidence, that claims 1, 2, 4, 5, 7, 13, and 24 would have been obvious over Wu and Hoogesteger, but Petitioner has shown, by a preponderance of the evidence, that claims 9, 14, 17, 19, and 21–23 would have been obvious over Wu and Hoogesteger.

E. Petitioner's Motion to Exclude

Petitioner moves to exclude Patent Owner's Exhibit 2005 (Amazon.com reviews) and paragraphs 41–43 of the Pearman Declaration (Exhibit 2014).[11] Paper 47, 1 ("Pet. Mot."). Patent Owner filed an Opposition (Paper 54) and Petitioner filed a Reply (Paper 57). Exhibit 2005 and paragraphs 41–43 of the Pearman Declaration are directed toward Patent Owner's arguments regarding objective indicia of nonobviousness that Patent Owner has since conceded, as noted above. Accordingly, Petitioner's Motion is *denied* as moot.

F. Patent Owner's Motion to Exclude

Patent Owner moves to exclude, under Federal Rule of Evidence 702, paragraphs 15 and 20–23 of the Wolfe Reply Declaration because "his opinions expressed in those paragraphs are based on data that is unreliable or incorrect, the product of unreliable principles and methods, and/or outside of his area of expertise." Paper 52, 1 ("PO Mot."). Patent Owner's challenge

[11] Petitioner's motion also includes the same paragraphs in the redacted version of the Pearman Declaration (Exhibit 2015). Pet. Mot. 1.

to paragraph 15 of the Wolfe Reply Declaration is directed to Dr. Wolfe's testimony rebutting Patent Owner's argument that modifying Wu's cap to a swivel cover, as disclosed by Hoogesteger, would destroy the functionality of Wu because Hoogesteger's swivel cover is not a tight cap. Ex. 1058 ¶ 15. In our discussion of Patent Owner's argument regarding the functionality of the proposed combination, we did not rely upon either of the party's expert declarations. Rather, we observed simply that nothing in Wu would have discouraged or led one of ordinary skill in the art away from using a swivel cover because nothing in Wu requires or necessitates a tightly fitting cap. Further, Patent Owner's arguments regarding paragraph 15 of the Wolfe Reply Declaration go to the weight of Dr. Wolfe's testimony rather than its admissibility. Nonetheless, because we did not, and do not, rely upon paragraph 15 of the Wolfe Reply Declaration, Patent Owner's Motion as directed to paragraph 15 is *denied* as moot.

Paragraphs 20–23 of the Wolfe Reply Declaration are directed toward rebutting Patent Owner's arguments regarding secondary indicia of nonobviousness, which Patent Owner has since conceded, as noted above. Accordingly, we did not rely upon paragraphs 20–23 of the Wolfe Reply Declaration and, thus, the remainder of Patent Owner's Motion is *denied* as moot.

IV. CONCLUSION

Petitioner has demonstrated, by a preponderance of the evidence, that: (1) claims 9, 14, 17, 19, and 21–23 are unpatentable as obvious over Matsumiya and Deng; and (2) claims 9, 14, 17, 19, and 21–23 are unpatentable as obvious over Wu and Hoogesteger. Petitioner has not demonstrated, by a preponderance of the evidence, that: (1) claims 1, 2, 7,

and 24 are unpatentable as obvious over Matsumiya and Deng; (2) claims 4, 5, and 13 are unpatentable as obvious over Matsumiya, Deng, and Kindig; or (3) claims 1, 2, 4, 5, 7, 13, and 24 are unpatentable as obvious over Wu and Hoogesteger.

V. ORDER

For the reasons given, it is

ORDERED that, based on a preponderance of the evidence, claims 9, 14, 17, 19, and 21–23 of U.S. Patent No. 6,926,544 B2 are unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude (Paper 47) is *denied* as moot;

FURTHER ORDERED that Patent Owner's Motion to Exclude (Paper 52) is *denied* as moot; and

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

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