

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 IPR2015-00149
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 Corrected Petition (Paper 4, “Pet.”) requesting institution of *inter partes* review of claims 8, 11, 12, 16, 18, and 20 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 8, “Prelim. Resp.”). Pursuant to 35 U.S.C. § 314, in our Decision to Institute, we instituted this proceeding as to claims 8, 11, 12, 16, 18, and 20 of the ’544 patent. Paper 11 (“Dec.”).

After the Decision to Institute, Patent Owner filed a Patent Owner Response (Paper 33, “Resp.”), and Petitioner filed a Reply to the Patent Owner Response (Paper 46, “Reply”). A consolidated oral hearing was held on December 14, 2015, in this matter and *Kingston Technology Co. v. CATR Co.*, IPR2015-00559. Paper 63 (“Tr.”).

Petitioner relies on the testimony of Andrew Wolfe, Ph.D., (Ex. 1016, “Wolfe Declaration”; Ex. 1058, “Wolfe Reply Declaration”; Ex. 1064¹) 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, Petitioner has demonstrated, by a preponderance of the evidence, that claims 8, 11, 12, 16, 18, and 20 of the ’544 patent are unpatentable.

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.

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

Petitioner also challenges several claims of the '544 patent in IPR2015-00559 ("IPR 559"). In that proceeding, we instituted an *inter partes* review of the '544 patent as to claims 1, 2, 4, 5, 7, 9, 13, 14, 17, 19, and 21–24. *Kingston Tech. Co. v. CATR Co.*, IPR2015-00559 (PTAB May 11, 2015) (Paper 7).

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 43, 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.*

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

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

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.

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); and

U.S. Patent No. Des. 199,589, issued November 17, 1964 (“Hoogesteger,” Ex. 1008).

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)	8, 11, 12, 16, 18, and 20
Wu and Hoogesteger	§ 103(a)	8, 11, 12, 16, 18, and 20

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:

[FIG. 2]

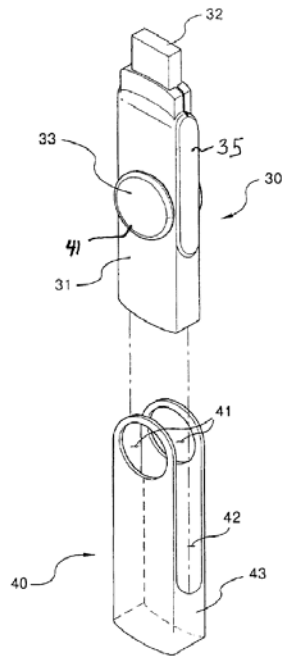
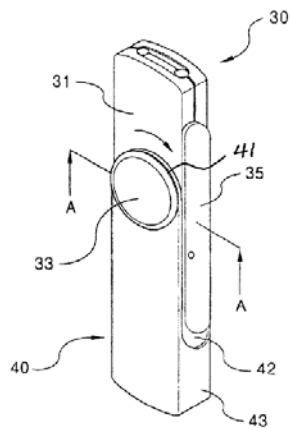


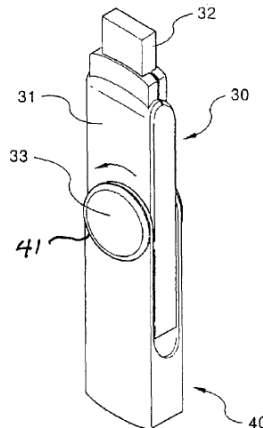
Figure 2 of the '544 patent shows “an exploded, perspective view of a flash memory apparatus having a single body type, rotary cover.” *Id.* at 2:54–55.

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).

[FIG. 3a]



[FIG. 3b]



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

Claim 8 is the only independent claim challenged in this proceeding. Claims 11, 12, 16, 18, and 20 depend, directly or indirectly, from claim 8. Claims 8 and 11 are illustrative of the claimed subject matter and are reproduced below:

8. A flash memory apparatus comprising:
a flash memory main body including a case within which a memory element is mounted, a 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 cover including a 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, a closed rear end and a pair of lateral side openings; the parallel plate members defining an inner space receiving the case and being hinged to the case wherein the USB terminal piece is positioned within the inner space of the cover or exposed outside the cover by rotating the cover and case with respect to one another.

Ex. 1001, 5:40–56.

11. The apparatus according to claim 8 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.

Id. at 6:5–8.

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 Technologies 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). We apply this standard to the claims of the ’544 patent. *See* Pet. 11 (proposing to construe the claims of the ’544 patent in accordance with the broadest reasonable interpretation standard); Resp. 11 (same).

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

Claim Term	Claim Construction in the Decision to Institute
“plate” (claims 8, 11, 12, 16, 18, and 20)	a thin, flat sheet or strip of metal or other material (Dec. 6–7)
“thickness” (claims 8, 11, 12, 16, 18, and 20)	the distance between opposite sides of something, distinct from width (Dec. 7–8)

In the Response and Reply, neither party disputes our preliminary constructions of “plate” and “thickness.” We adopt our preliminary constructions of “plate” and “thickness” based on the full record 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 waived the opportunity to propose constructions for additional terms by not setting forth such constructions prior to institution of *inter partes* review. Reply 3 (citing *Silicon Motion Tech. Corp. v. Phison Elecs. Corp.*, IPR2013-00473, slip op. at 3 (PTAB Apr. 8, 2014) (Paper 14)). 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 waiver when, as here, a patent owner chooses to file a preliminary response and yet propose that additional terms be construed in a patent owner response.⁴ Accordingly, we address Patent Owner's newly proposed constructions below.

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, 5:46 (claim 8). Patent Owner asserts that the phrase "a pair of parallel plate members" should be construed to mean "a pair of thin, flat sheets or strips of metal or other material in a parallel configuration capable of flexing from the parallel configuration and returning to the parallel configuration." Resp. 16. Patent Owner bases its proposed construction on a method of attaching the cover to the case via hinge protuberances on the front and rear sides of the case. *Id.* at 15–16. In particular, Patent Owner relies upon three figures—Figures A through C—that it prepared for this proceeding, but are not part of the '544 patent.

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

Patent Owner contends that the plate members must flex as shown in Figure B to accommodate the thickness of the case measured between the protuberances when assembling the flash memory device. *Id.* at 15–16.

Patent Owner’s Figures A through C are shown below:

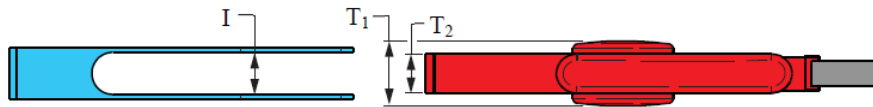


Fig. A

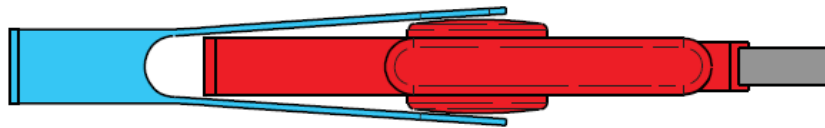


Fig. B

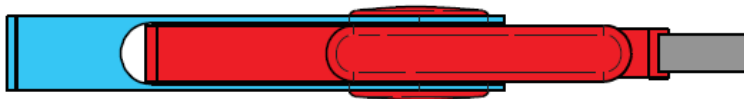


Fig. C

Figures A–C, illustrating a flash memory main body, a cover, an interval between parallel plate members (labeled “I”), a thickness of the case (labeled “T₂”), and a thickness of the case between protuberances (labeled “T₁”), are reproduced from Patent Owner’s Response. *Id.* at 4–5.

Additionally, Patent Owner relies upon the Visser Declaration and the deposition testimony of Dr. Wolfe in asserting that all plates flex. *Id.* at 16 (quoting Ex. 2012, 131) (citing Ex. 2013 ¶¶ 35–36).

Petitioner asserts that Patent Owner’s proposed construction is not supported by the intrinsic evidence. In particular, Petitioner contends that Patent Owner adds requirements that “(1) the plates be ‘metal or other material,’ and (2) they be in a ‘parallel configuration capable of flexing from a parallel configuration and returning to the parallel configuration.’”

Reply 3–4. Petitioner asserts that “the ’544 patent makes no mention of any required materials and never uses the word ‘metal’” and “makes no mention of the plates ‘flexing,’ much less makes it a requirement of the invention.” *Id.* at 4 (citing Ex. 1058 ¶ 4). Petitioner contends that Patent Owner’s argument is erroneously based on one embodiment of the ’544 patent and a general statement from Dr. Wolfe that plates are able to flex. *Id.*

First, Petitioner’s argument that the ’544 patent does not mention metal is inapposite as the phrase “metal or other material” clearly reflects that a plate is not limited to only metal.

Second, we disagree with Patent Owner that we should read the phrase “capable of flexing from the parallel configuration and returning to the parallel configuration” into the claim term “a pair of parallel plate members.” All of the ’544 patent claims are apparatus claim, and none of claims 8, 11, 12, 16, 18, or 20 recite a method of attaching the cover to a case protuberance. The ’544 patent specification does not mention the terms “flex” or “flexing,” and Patent Owner does not point to anything in the prosecution history to support its argument that the claim term should be so limited. In light of the above discussion, we decline to read “capable of flexing from the parallel configuration and returning to the parallel configuration” into the claim phrase “a pair of parallel plate members.” Accordingly, we construe “a pair of parallel plate members” as “a pair of thin, flat sheets or strips of metal or other material in a parallel configuration.”

B. “open front end” / “closed rear end”

Each of the challenged claims recites “the cover having an *open front end*, a *closed rear end* and a pair of lateral side openings.” *See, e.g.*, Ex. 1001, 5:48–49 (claim 8) (emphases added). Patent Owner proposes that the phrase “open front end” means that “the plates are not fixed together at that end” and that the phrase “closed rear end” means that “the plates are fixed together at that end.” Resp. 17 (citing Ex. 2013 ¶ 35). Patent Owner states that the front end of the cover is open “because the plate members have no need for a shaft or axle to enable the cover to rotate or pivot with respect to the flash memory main body, or more specifically the cover.” *Id.*

Petitioner asserts that Patent Owner’s proposed construction “is solely attorney argument . . . [and] finds no support in the specification.” Reply 4 (citing Ex. 1058 ¶ 5). Petitioner contends that the ’544 patent does not exclude use the use of axle-based hinges. *Id.* Petitioner argues that regardless of any discussion of axles, the ’544 patent makes clear that “the ‘open front end’ is judged by examining the cover alone separated from the rest of the USB drive.” *Id.* at 5 (citing Ex. 1001, 2:30–35, Fig. 2; Ex. 1058 ¶ 5).

As reflected above, from a high level, claim 8 is directed to a flash memory apparatus comprising a flash memory main body and a cover. The cover is recited as “having an open front end, a closed rear end and a pair of lateral side openings.” Ex. 1001, 5:48–49. The cover is also recited as “hinged to the case.” *Id.* at 5:51. The ’544 patent specification describes the cover as follows:

The cover 40 has a cavity therein and is of a shape having width wider than its thickness, namely ‘U’ shaped, when viewed laterally. The cover 40 has open end [sic] and a closed end.

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.

Id. at 3:31–34. As shown in the “exploded, perspective view” of Figure 2, reproduced in Section I.F. above, the open end of the cover allows the flash memory main body to be inserted therein. The closed end of the cover is shown at the bottom of Figure 2, although neither the open nor closed end is labeled with a reference numeral.

In light of its plain and ordinary meaning, we construe the term “open front end” to mean that the plates are not fixed together at that end. Likewise, in light of its plain and ordinary meaning, we construe the term “closed rear end” to mean that the plates are fixed together at that end. We also agree with Petitioner, however, that the 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.

C. “hinge protuberance”

Claim 11, which depends from claim 8, further 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) (emphasis added).

Relying on Professor Visser’s testimony, Patent Owner contends that the plain and ordinary meaning of “protuberance” is “a structure with ‘the

quality of bulging out beyond the surrounding surface, protruding, projecting.” Resp. 19 (quoting Ex. 2013 ¶¶ 29–32). Patent Owner asserts that the term “hinge protuberance” “is a structure that protrudes from the case and protrudes into a hinge hole of a plate member of the cover but does not extend through the case like an axle would.” *Id.* Patent Owner points to the ’544 patent specification, contending that it discloses two embodiments of hinge protuberances—those formed integrally with the case and those manufactured in the form of separate elements and assembled by means of an adhesive agent. *Id.* at 18 (citing Ex. 1001, 3:24–28). Patent Owner acknowledges that the specification discloses that the configuration can be reversed “such that the hinge protuberance is on the cover and extends into a hole in the case,” but that is not the embodiment recited by claim 11. *Id.* (citing Ex. 1001, 4:26–28). Additionally, Patent Owner explains that the specification states “that ‘[a] hinge protuberance [is] for functioning as a rotation shaft of a cover 40.’” *Id.* (quoting Ex. 1001, 3:20–21 (alterations added by Patent Owner)). Patent Owner, however, reads that disclosure as indicating that although a hinge protuberance functions as a rotation shaft, it is not itself a rotation shaft, e.g., an axle. *Id.*

Petitioner takes issue with the latter portion of Patent Owner’s construction, contending that it “is designed solely to add the negative limitation ‘axle-less’ which never appears in the ’544 patent.” Reply 5. Petitioner asserts that the specification “never limits the invention to the particular exemplary construction method nor restricts the hinge protuberance from being a shaft. The description that the hinge protuberance is ‘for functioning as a rotation shaft’ sets forth a description of function – not of structure.” *Id.* (citing Ex. 1058 ¶ 6). Petitioner argues that

“[t]he ’544 patent never uses the word ‘axle’ nor limits a ‘hinge protuberance’ to ‘protruding from the case’ or not extending through the case.” *Id.* at 5–6. Rather, according to Petitioner, the ’544 patent “expressly discusses embodiments where the hinge protuberance is not even located on the case and is expressly described as extending into the case.” *Id.* at 6 (citing Ex. 1001, 4:27–33; Ex. 1058 ¶ 6).

Petitioner further challenges Patent Owner’s reliance upon Professor Visser’s testimony regarding the meaning of “protuberance,” asserting that Patent Owner did not produce the dictionary upon which Professor Visser relied and that Professor Visser disregarded other definitions in favor of selecting the one he chose. *Id.* Petitioner states that “[i]f a construction is required, Petitioner would be fine with ‘a hinging structure that bulges out beyond the surrounding surface, protrudes, or projects.’” *Id.*; see Tr. 16:13–14 (“A protuberance is something that projects or protrudes.”).

As reflected above, the parties generally agree that “protuberance” means “a structure that bulges out beyond the surrounding surface, protrudes or projects.” Where the parties disagree is in the meaning of “hinge protuberance.” Patent Owner’s proposal adds language to the meaning of protuberance to include “protrud[ing] into a hinge hole of a plate member of the cover but does not extend through the case like an axle would” whereas Petitioner’s simply adds the modifier “hinging” to the term “structure.” As reflected above, claim 11 recites “and at least one hinge hole in one of the parallel plate members that receives the hinge protuberance.” Ex. 1001, 6:7–8. The language of the claim clearly contemplates receipt of the hinge protuberance by the hinge hole, but that flows from the quoted language of claim 11 and not from the term “hinge protuberance” standing alone. Patent

Owner's additional language, which seeks to exclude extending through the case as an axle would, does not flow from the term "hinge protuberance" either. Rather, as discussed below, Patent Owner's argument regarding possible hinge structures appears directed more appropriately to the term "on" as it appears in the recitation—"on at least one side of the case"—from claim 11. Further, we agree with Petitioner that the '544 patent specification's disclosure that the hinge protuberance "function[s] as a rotation shaft" (*see* Ex. 1001, 3:20–21) does not distinguish the structure of a hinge protuberance from a rotation shaft; rather, it simply analogizes the function of the hinge protuberance to that of a rotation shaft. Thus, we see no reason to read Patent Owner's additional language into the term "hinge protuberance." Rather, we construe "hinge protuberance" as a "hinging structure that bulges out, protrudes, or projects, beyond the surrounding surface."

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

As discussed above, claim 11 recites "a hinge protuberance on at least one side of the case." Ex. 1001, 6:6–7. Although neither party proposes a specific construction for the phrase "on at least one side of the case," it is clear from the arguments presented in the discussion of the references and at the oral hearing that the construction of the phrase is in dispute, bears on the substantive matters before us and, thus, warrants our attention. At the oral hearing, Petitioner's counsel asserted that the "plain meaning of 'on' is simply 'on the side of.' You would say [Patent Owner's counsel] is on my left side, but he is certainly not attached to me." Tr. 35:12–14. Petitioner's counsel further stated 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.

Id. at 36:4–9.

Patent Owner’s counsel responded to Petitioner’s construction of “on” as follows:

We think they are proposing a non-ordinary meaning of the word “on” especially when you consider it in light of the whole phrase “a hinge protuberance on the side of the case.” It doesn’t mean that it is just kind of over here (indicating) as [Petitioner’s counsel] said, like I was seated over to his left, that I’m in this location and in this vicinity, I am somewhere around here. It means literally on the case.

Id. at 62:9–16. In response to questions during the oral hearing, Patent Owner’s counsel drew a contrast between an element protruding from the surface of at least one side of the case and an element protruding from the surface of the case, but also extending into the case. *See* Tr. 59:5–60:11 (explaining that “[t]he patent is really focused on something that is just on the surface of the two sides of a case, so that it can easily pivot” and agreeing that if a small hole is drilled into the case such that the hinge element also extends into the case, that is outside the scope of the patent).

As reflected above, Petitioner proposes a broader construction for the term “on,” one that does not require a physical attachment to “at least one side of the case” and does not exclude a hinge element that protrudes from the surface of the case, but also extends into the case. An example of such a hinge protuberance on at least one side of the case that does not require a physical attachment to “at least one side of the case” is a through-axle—an axle that extends through the case and protrudes out of the surfaces of

opposing sides of the case. In other words, a through-axle is a “hinging structure that bulges out, protrudes, or projects beyond the surrounding surface” of at least one side of the case. A through-axle is also “on at least one side of the case” because it protrudes from both sides of the case, and, hence, is *on* two sides of the case.

We are not persuaded to adopt Patent Owner’s construction. We conclude that Patent Owner’s argument—that the phrase “hinge protuberance on at least one side of the case” means that the protuberance is “literally on the case”—is founded upon an unduly restrictive meaning of the term “on” that fails to apply the broadest reasonable interpretation in light of the specification, as well as ignoring the distinction, discussed below, between the ’544 patent’s use of the terms “on” and “formed on.”

Dictionary definitions of “on” confirm that the term has a range of meanings, depending on the context, including the competing meanings advanced by the parties. For example, Merriam-Webster defines “on” as follows:

1a: “used as a function word to indicate position in contact with and supported by the top surface of <the book is lying *on* the table>”

1b: “used as a function word to indicate position in or in contact with an outer surface <the fly landed *on* the ceiling> <I have a cut *on* my finger> <paint *on* the wall>”

1c: “used as a function word to indicate position in close proximity with <a village *on* the sea> <stay *on* your opponent>”

1d: “used as a function word to indicate the location of something <*on* the left> <*on* the south side of the house> <*on* the farm>”

Merriam-Webster 1, available at <http://www.merriam-webster.com/dictionary/on> (last visited Mar. 24, 2016) (“Ex. 3001”).⁵ The fact that “on” has multiple dictionary meanings does not mean that all of these meanings are reasonable interpretations in light of the specification. *See PPC Broadband, Inc. v. Corning Optical Commc’ns RF, LLC*, No. 2015-1364, 2016 WL 692369, at *3 (Fed. Cir. Feb. 22, 2016) (finding that multiple dictionary definitions do not, on their own, mean that each is reasonable in light of the specification).

Neither party contends that the specification defines the phrase “on at least one side of the case” either by adopting an ordinary meaning or a special meaning of the phrase. Nor does either party contend that the prosecution history sheds light on the meaning of the phrase, and our review does not reveal otherwise.

The specification states the following with respect to the location of the hinge protuberance:

A hinge protuberance 33 for functioning as a rotation shaft of a cover 40 is provided on an appropriate position of a front side and a rear side of the case 31. Such hinge protuberance 33 may be formal [sic] integrally^[6] with the case 31, or may be manufactured in form of a separate element so that the hinge

⁵ There is no evidence to suggest that the plain and ordinary meaning of “on” changed between 2002 and present.

⁶ It is understood that “formal integrally” is a typographical error that should read “formed integrally.” *See, e.g.*, Tr. 16:14–18 (counsel for Petitioner acknowledges that “[t]he specification certainly does set forth in one embodiment a protuberance that is integrally *formed* and describes as part of the preferred embodiment that you could have a protuberance that is integrally formed” (emphasis added), 60:21–23 (counsel for Patent Owner acknowledging the typographical error)).

protuberance 33 is assembled by means of an adhesive agent (The present embodiment shows the latter case).

Ex. 1001, 3:20–27. The specification also states:

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 the rear sides of the case, and also, only one hinge hole for receiving the hinge protuberance could be provided to the cover.

Id. at 4:27–33.

As reflected above, the written description portion of the specification does not recite the phrase “hinge protuberance on at least one side of the case.” Rather, the closest language therein states “[a] hinge protuberance . . . is provided *on an appropriate position* of a front side and a rear side of the case 31.” *Id.* at 3:20–23 (emphasis added). In other words, the specification focuses on the position in which the hinge protuberance is provided. Although the specification does not explain what is meant by an “appropriate position,” it logically follows that an appropriate position is one in which the hinge protuberance can mate with the hinge hole provided on the cover. Patent Owner has not explained how, or why, the phrase “on an appropriate position of a front side” suggests or compels a reading of “on” requiring physical attachment to at least one side of the case and precluding any extension into the case. *See Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1373 (Fed. Cir. 2014) (applying the plain and ordinary meaning of “datalink” and noting that nothing in the specification suggested that “datalink” should be limited to the preferred embodiment).

In contrast, other language in the specification describes how the protuberance may be manufactured. *See* Ex. 1001, 3:23–27. In particular,

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.” *Id.* The specification recites the phrase “formed on” in several instances.⁷ 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 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 equates a hinge protuberance manufactured separately and assembled

⁷ 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 . . .”).

by means of an adhesive agent as one that is “formed on.” Additionally, the specification supports that finding that the integrally formed embodiment also is encompassed within the meaning of a hinge protuberance “formed on” the side the case. We note that these two examples are not described as the only two options for forming a hinge protuberance, nor does Patent Owner explain persuasively why these examples from the specification should be read to limit the meaning of the claim phrase “on at least one side of the case.”

The ’544 patent continues the use of the word “formed” in three of the independent claims to describe the relationship between a hinge protuberance and a side of the case. In particular, claim 1 recites “a hinge protuberance *formed on* at least one side of the case.” Ex. 1001, 4:47–48 (emphasis added).

In sum, 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.

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*

Petitioner and Patent Owner essentially agree that a person of ordinary skill in the art would have had a bachelor’s degree in engineering and at least two years of experience. Pet. 8 (citing Ex. 1016 ¶¶ 35–36); Resp. 13; Ex. 2013 ¶ 19. Where the parties disagree, however, is precisely what type of degree and experience one of ordinary skill in the art would have had. Petitioner asserts that a person of ordinary skill in the art would have had a degree in “Electrical or Mechanical Engineering” with experience “designing electronic devices” (Pet. 8 (citing Ex. 1016 ¶¶ 35–36)), whereas Patent Owner contends that a person of ordinary skill in the art would have had a degree in “industrial design or engineering, particularly mechanical engineering” with experience in the research and development of mechanical structures for electronic components. Resp. 13. Patent Owner asserts that Dr. Wolfe’s declaration does not indicate that he is an expert in mechanical engineering and, therefore, his testimony should be given less weight than that of Professor Visser “with respect to the mechanical aspects of the claimed subject matter.” Resp. 14.

We recognize, as did Dr. Wolfe, that although the claims have electronic elements, the claims are mostly related to mechanical aspects of the recited flash memory apparatus. *See* Ex. 2012, 17:12–15 (“I think that

all the claims have some electronic elements that are limitations. But generally, most of the elements relate to mechanical aspects of the claim.”). Also, we find that the issues presented here relate primarily to the mechanical elements of the invention. Accordingly, we find 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 electronic components, which may be incorporated in mechanical designs.

2. *Objective Indicia of Nonobviousness*

During the oral hearing, Patent Owner conceded that it had not proven 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.”).

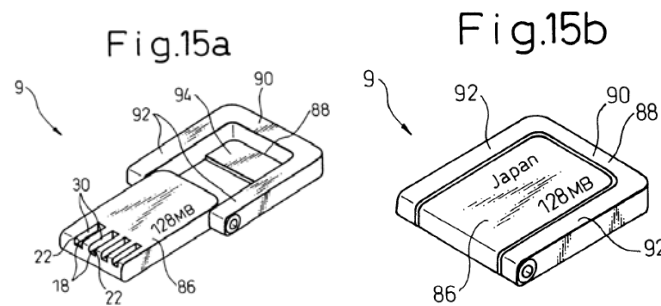
Accordingly, there is no argument regarding secondary indicia of nonobviousness before us.

B. *Obviousness over Matsumiya and Deng*

Petitioner asserts that the combination of Matsumiya and Deng would have rendered obvious the subject matter of claims 8, 11, 12, 16, 18, and 20 of the ’544 patent to one of ordinary skill in the art at the time of the invention. Pet. 4.

1. *Matsumiya*

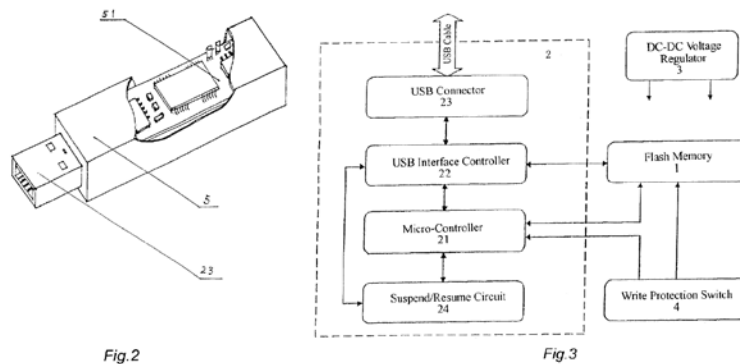
Matsumiya discloses a “card-type peripheral device with a connector element, the device comprising the function of shielding the contacts to prevent the accumulation of dust and dirt on the contacts when the device is not in use.” Ex. 1003, 1:42–46. Figures 15a and 15b are shown below:



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

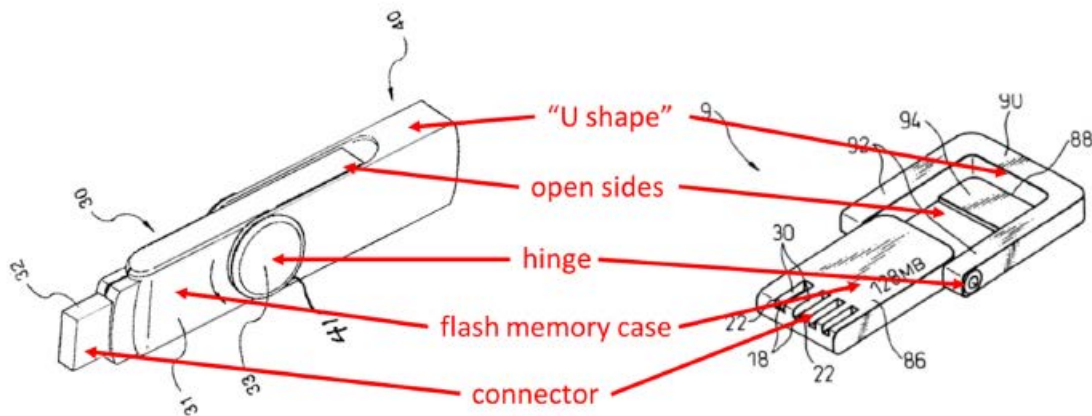
Deng discloses “an electronic flash memory external storage method[,]” including a flash memory device. Ex. 1005, 2:10–15. In particular, Deng teaches that the external storage device is implemented with a USB interface. *Id.* at 7:16–18. Figures 2 and 3 of Deng are shown below:



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 rather than a USB device, while Deng discloses a USB flash memory storage device. Pet. 16. 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.* 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.* 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 18–19 (citing Ex. 1016 ¶¶ 63–67); *id.* at 18 ("One of ordinary skill upon reviewing Matsumiya would have understood the problem that dirt and dust accumulation (as well as damage) can cause for 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 ¶¶ 63–66)).

a. *Claim 8*

- i. “[a] flash memory apparatus comprising;
“a flash memory main body;”
“a case within which a memory element is mounted;”
“a 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;”
“a cover;” and
“wherein the USB terminal piece is positioned within the inner space of the cover or exposed outside the cover by rotating the cover and case with respect to one another”

With respect to claim 8, Petitioner points to both Matsumiya and Deng as disclosing the preamble of the claim—“[a] flash memory apparatus.” Pet. 20 (citing Ex. 1003, 1:9–25, 12:31–42, Fig. 15a/b; Ex. 1005, 7:9–30, Figs. 1, 3, 5, Title, Abstr.). Petitioner asserts that Matsumiya and Deng each disclose “a flash memory main body.” Pet. 21–22. In particular, Petitioner points to Matsumiya’s “hollow card-type housing 86” (*id.* at 21 (citing Ex. 1003, 12:28–37, Figs. 15a, 15b)) and Deng’s casing 5 (*id.* at 21–22 (citing Ex. 1005, Fig. 2)). Pet. 21–22 (citing Ex. 1016 ¶¶ 78–79). Petitioner also contends that Matsumiya and Deng each disclose “a case within which a memory element is mounted.” Pet. 22–23. Petitioner relies upon the arguments presented above with respect to the flash memory apparatus and flash memory main body elements of the claim. *Id.* at 22. Petitioner further asserts that Deng discloses a “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.” Pet. 23–24 (citing Ex. 1005, Fig. 1, 7:9–36; Ex. 1016 ¶¶ 82–86). Petitioner contends that Matsumiya discloses “a cover”—cover 88. Pet. 24–25 (citing Ex. 1003, 12:40–42, Figs. 15a, 15b, 13:3–21; Ex. 1016 ¶ 87). With respect to the “wherein” clause, Petitioner points to Matsumiya as disclosing a cover and case that rotate with respect to one another to expose contact portions of a flash memory device.⁸ Pet. 29 (citing, *inter alia*, Ex. 1003, Figs. 15a, 15b, 12:61–13:21). Patent Owner does not dispute these contentions. See *generally* Resp. After consideration of Petitioner’s evidence, we find that Matsumiya and Deng teach these limitations.

- ii. *“a pair of parallel plate members facing each other and spaced by an interval corresponding to the thickness of the case”*

Petitioner asserts that “the teaching of Matsumiya would have motivated a person of ordinary skill to mount the cover to either one of the two sets of parallel sides of Deng and (as per the teaching of Matsumiya) space the cover in superposition around the case to make it dustproof.” *Id.* at 26–27 (citing Ex. 1016 ¶ 92).⁹ Additionally, Petitioner contends that one of ordinary skill in the art would have recognized that “the attachment

⁸ As noted above, Petitioner relies upon Deng as disclosing a USB terminal piece. See Pet. 29 (referring to “Limitation[] 8D,” which is directed to the USB element of the claims, in the context of addressing this rotating element of the claim).

⁹ In our Decision to Institute, we recognized that Matsumiya does not disclose this element of the claim, but determined that Petitioner’s argument regarding adding a cover to either of the parallel sides of Deng would result in satisfying this element of the claim. Dec. 12–13.

hinges (and thus, the cover) could be mounted on either of the two sets of parallel sides of Deng’s flash memory external storage device.” *Id.* at 27 (citing Ex. 1016 ¶ 93).

In its Response, Patent Owner argues that modifying Matsumiya’s arms to be “plates” “could cause one or more problems.” Resp. 25 (citing Ex. 2013 ¶¶ 62–69). In particular, Patent Owner contends the following: (1) “the dimensional stability may be altered” and (2) the modification “could also provide insufficient rigidity to support an axle.” *Id.* at 25 (citing Ex. 2013 ¶¶ 62–69).

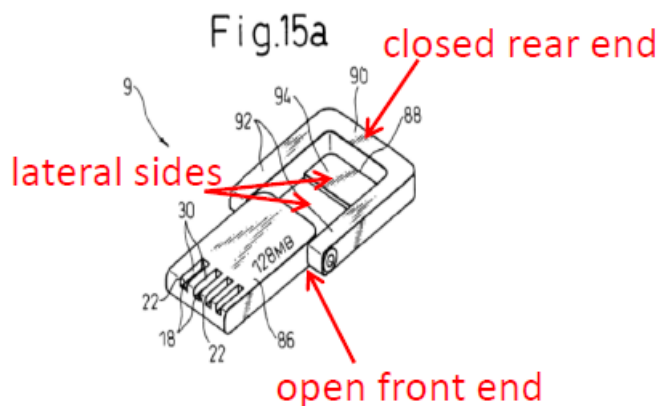
Petitioner responds by noting that Patent Owner’s arguments raise “a bevy of speculative ‘problems’ that . . . [may] occur if one used the cover of Matsumiya in any configuration other than a square cross-section.” Reply 7 (citing Resp. 24–25). Petitioner asserts that a person of ordinary skill “is not an ‘automaton’ and would have sized the case of Matsumiya to fit Deng.” *Id.* at 8 (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007)). Also, Petitioner contends that Professor Visser agreed that one of ordinary skill in the art would have understood how to size a cover to fit an item. Reply 8 (citing Ex. 1050, 19:22–20:1, 21:1–5).

We are persuaded that Petitioner has shown by a preponderance of the evidence that modifying Matsumiya’s cover, particularly arms 92, to a different dimension, namely modifying them to be “plate members” (i.e., thin, flat sheets or strips of metal or other material) would have been within the level of ordinary skill in the art at the time of the invention. Patent Owner’s series of speculative arguments do not counter sufficiently Petitioner’s evidence of obviousness. Specifically, we agree with Petitioner that a person of ordinary skill in the art is not an automaton and that were

such a person to consider adding a cover, such as that of Matsumiya, to the case of Deng, it was well within the level of ordinary skill in the art to size the cover to fit Deng's case. *See, e.g.*, Ex. 1058 ¶ 7. Further, in adding a cover, such as that of Matsumiya, to either of the parallel sides of Deng's case, we agree with Petitioner that one of ordinary skill in the art would have modified Matsumiya's arms to match the width and thickness of Deng's case, which would have resulted in "parallel plate members spaced by an interval corresponding to the thickness of the case." *See KSR*, 550 U.S. at 418 ("a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ").

iii. *"the cover having an open front end, a closed rear end and a pair of lateral side openings"*

Petitioner contends that Matsumiya meets this element by disclosing "the cover having an open front end, a closed rear end and a pair of lateral side openings." Pet. 27–28 (Ex. 1003, 12:44–60, Fig. 15a; Ex. 1016 ¶ 94). Petitioner includes the following annotated version of Matsumiya's Figure 15a:



Petitioner's annotated version of Matsumiya's Figure 15a is shown above, including labeling a "closed rear end," "open front end," and "lateral sides." *Id.* at 27. Petitioner explains that Matsumiya's cover 88 "has an open front

end (the top of the ‘u-shape’ where the case 86 is mounted), a closed rear end (the bottom of the ‘u-shape’), and two lateral side openings (the open ‘faces’ on near and far sides of the ‘u-shape’).” *Id.* at 28 (citing Ex. 1016 ¶ 94).

Patent Owner asserts that Matsumiya does not disclose the recited “open front end” because Matsumiya’s arms are connected by an axle that extends from one arm, through the housing, and into the other arm. Resp. 26–27 (citing Ex. 2013 ¶¶ 89–90). Additionally, Patent Owner contends that there “would not have been any reason to modify Matsumiya such that the cover 88 has an open front end.” *Id.* at 26 (citing Ex. 2013 ¶¶ 89–90).

In its Reply, Petitioner asserts that Matsumiya does not disclose that the arms are connected to the case via an axle extending through the case. Reply 12 (“Patent Owner is only able to arrive at its argument by adding an axle to Matsumiya that is never described in the reference itself and then declaring that this axle is a part of the cover even though it would be literally inside the case of Matsumiya even under Patent Owner’s argument.”). Petitioner contends also that Professor Visser agreed that without an axle extending through the case, Matsumiya would have an open front end. *Id.* (citing Ex. 1050, 133:6–7).

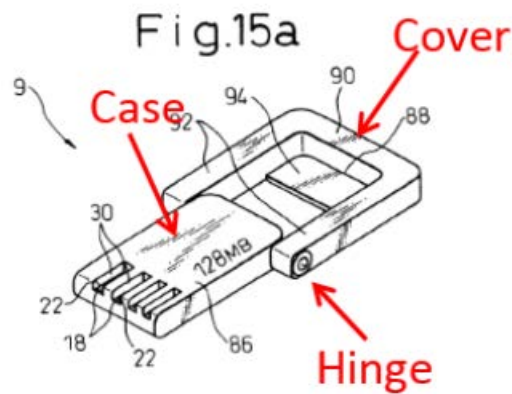
We agree with Petitioner and find that Matsumiya discloses a cover in a “u-shape” and that the top of the u-shape teaches an open front end because the arms are not fixed to one another at that end. Similarly, we agree with Petitioner that the bottom of Matsumiya’s u-shaped cover teaches a closed rear end. Additionally, we discussed the claim language and the specification in the context of construing the term “open front end,” and

concluded that the terms describe the structure of the cover and that description does not change after the case is attached. *See supra* Section II.C. In other words, attachment of Matsumiya's case to its arms does not result in Matsumiya's cover no longer having an open front end, whether Matsumiya uses an axle or not.

Further, although Patent Owner does not challenge Petitioner's evidence with respect to whether Matsumiya discloses a closed rear end and a pair of lateral side openings, we find that Matsumiya teaches these elements of the claim.

- iv. *“the parallel plate members defining an inner space receiving the case and being hinged to the case”*

Petitioner asserts that Matsumiya discloses this element of the claim. Pet. 28–29. Petitioner points to Matsumiya's teachings that “dustproof cover 88 is mounted on the housing 86 swingably about the forward end portions of the two arms 92” and “[t]he swing operation of the dustproof cover 88 ranges at least from a closed position where the dustproof cover 88 is overlapped with the housing 86 and the contact portion openings 30 are closed by the cover portion 94 thereby to shield the contact portions 18 of the contacts.” *Id.* at 28 (quoting Ex. 1003, 12:44–46, 49–57). Petitioner includes the following annotated version of Matsumiya's Figure 15a:



Matsumiya's Figure 15a is shown above as annotated by Petitioner to identify a "case," "cover," and "hinge." *Id.* at 29.

Patent Owner contends that Matsumiya "shows an axle extending through the arms 92 that also extends either partially or entirely through housing 86." Resp. 26. Patent Owner asserts that the housing and cover are hinged to an axle, so that they can swing with respect to each other, but "they are not hinged to each other." *Id.* (citing Ex. 2013 ¶ 80). Patent Owner contends that the "combination of Matsumiya and Deng provides one of ordinary skill in the art with no insights for how to hinge the arms and housing together." Resp. 26 (citing Ex. 2013 ¶ 80).

Petitioner responds that Patent Owner has not shown that Matsumiya is limited to an axle. Reply. 9. Rather, Petitioner contends that Matsumiya does not state that its cover and case are hinged by an axle. *Id.* at 9–10.

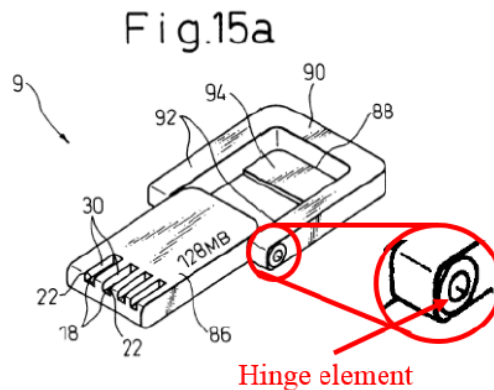
The only structure disclosed in the '455 patent specification as performing a hinging function, and, hence, support for the recitation "being hinged to the case" in claim 8, is a "hinge protuberance." Ex. 1001, 3:20–21. In other words, with respect to the phrase "being hinged to the case," the specification does not prohibit a relationship where the case is connected to one component (e.g., a protuberance), and that component is connected to the cover, thereby providing a hinge. Matsumiya's Figures 15a and 15b,

along with the textual description of a “swing operation” as noted above, support Petitioner’s argument that Matsumiya’s cover is hinged in some manner to the case. Even assuming that Matsumiya discloses an axle,¹⁰ as Patent Owner contends, Matsumiya teaches a cover “being hinged to the case,” as recited in the claim.

b. Claims 11 and 12

Claim 11 depends from claim 8 and further 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 12 depends from claim 11. *Id.* at 6:9–11. Petitioner contends that Matsumiya discloses the additional elements recited by claim 11. Pet. 30–31. 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.” *Id.* at 30 (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:

¹⁰ Although we need not find that Matsumiya discloses an axle to decide whether Matsumiya teaches a cover “being hinged to the case,” the evidence presented by the parties indicates that the most likely mechanism by which Matsumiya performs its “swing operation” is that of an axle. See Ex. 1003, Figs. 15a, 15b (illustrating two concentric circles on the near arm of the cover); Ex. 2012, 85:9–18 (Dr. Wolfe testifying that “normally, you’d presume that it’s a through axle”); Ex. 2013 ¶ 78 (Professor Visser testifying that “Matsumiya has an ordinary hinge that goes through the case”).



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.* at 31. 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 ¶¶ 101–104).

Patent Owner asserts that “[t]here is nothing in Matsumiya that teaches or suggests a hinge protuberance.” Resp. 30 (citing Ex. 2013 ¶ 78). Rather, Patent Owner contends that “Matsumiya merely discloses a post or a 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). Patent Owner asserts that the recited hinge protuberance “is limited to embodiments that are either integral with the case or are adhered on the case. Neither embodiment extends into the case[,] just the cover.” *Id.* at 30–31 (citing Ex. 1001, 3:24–28).

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 12–13 (citation omitted). Petitioner asserts that Patent Owner’s expert, Professor Visser, conceded that a snap hinge is a hinge protuberance. *Id.* at 13 (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).

Patent Owner’s arguments are based on an incorrect construction of the phrase “a hinge protuberance on at least one side of the case.” *See* Resp. 30–31; *see also* Ex. 2013 ¶ 80 (Professor Visser testifying that “[a] shaft or axle is not a protuberance.”). As we discussed in the context of construing the terms “hinge protuberance” and “on at least one side of the case,” the language of claim 11 does not preclude an axle, which protrudes from the sides of Matsumiya’s case into each arm and also extends through the case.

We find that Matsumiya’s Figure 15a teaches that a hinge protuberance extends from the side of the case and into each of the arms of the cover. A hinge protuberance extending from two opposing sides of Matsumiya’s case discloses the claimed recitation of a “hinge protuberance on at least one side of the case.”

Claim 12 depends from claim 11 and further recites “wherein there is a hinged protuberance on a front side and a back side of the case and a hinge hole in each of the parallel plate members.” Ex. 1001, 6:9–11. Petitioner relies upon its arguments directed to claim 11 and, particularly, Matsumiya’s Figures 15a and 15b as disclosing the elements of claim 12. Pet. 31–32

(citing Ex. 1003, 12:44–46, Figs. 15a, 15b). Patent Owner’s argument directed to claim 12 depends entirely on its argument regarding the phrase “hinge protuberance on at least one side of the case” as recited in claim 11. *See, e.g.*, Resp. 30. After consideration of Petitioner’s evidence, we find that Matsumiya teaches the recited elements of claim 12 as the figures indicate the existence of a hinge hole in each of the parallel plate members.

c. Claims 16, 18, and 20

Each of claims 16, 18, and 20 depends from claim 8 and adds a further limitation with respect to the shape of either the case or the cover. Claim 16 recites “wherein the case is rectangular-like.” Ex. 1001, 6:31–32; *id.* at 9¹¹ (Cert. of Corr.). Claim 18 recites “wherein the end of the case opposite the front end has a curved shape.” *Id.* at 6:34–35. Claim 20 recites “wherein the front end of the cover has a curved shape.” *Id.* at 6:38–39.

With respect to claim 16, Petitioner asserts that Matsumiya and Deng each disclose a “rectangular-like” case. Pet. 33 (citing Ex. 1003, Fig. 15a; Ex. 1005, Fig. 2; Ex. 1016 ¶ 78). Patent Owner does not contend that Matsumiya and Deng fail to disclose this element of the claim. *See generally* Resp. We find that Deng teaches this element of the claim.

With respect to claim 18, Petitioner contends that Matsumiya discloses a housing (i.e., case) with a curved front end. Pet. 34–35 (citing Ex. 1003, Figs. 15a, 15b). Additionally, Petitioner asserts that “to the extent that the . . . case end is deemed not to have [a] curved shape, it would have been obvious to the ordinary artisan to use rounded corners, as rounded corners for a case are a well-known design choice in the art.” *Id.* (citing

¹¹ This citation is to page 9 of the exhibit.

Ex. 1016 ¶ 113; *KSR*, 550 U.S. at 417). Patent Owner does not contend that Matsumiya fails to disclose this element of the claim or that it would not have been obvious to one of ordinary skill in the art at the time of the invention. *See generally* Resp. In light of Petitioner’s proposed combination, which relies upon Deng’s case, we find that it would have been obvious to modify the shape of Deng’s case to a curved front end.

With respect to claim 20, Petitioner contends that Matsumiya discloses that the front end of the cover has a curved shape. *Id.* at 35–36 (citing Ex. 1003, Figs. 15a, 15b). Additionally, Petitioner raises the same arguments as noted with respect to claim 18, asserting that if the front end of Matsumiya’s cover is deemed not to have a curved shape, such shape would have been an obvious design choice and that it is a non-functional, purely decorative feature. *Id.* (citations omitted). Patent Owner does not contend that Matsumiya fails to disclose this element of the claim or that it would not have been obvious to one of ordinary skill in the art at the time of the invention. *See generally* Resp. Although we cannot discern from Matsumiya’s Figures 15a and 15b, alone, that the front end of the cover has a curved shape, we agree with Petitioner that it would have been obvious to modify Matsumiya’s cover to a curved shape.

d. Reason to Combine

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.” Pet. 18 (citing Ex. 1016 ¶¶ 63–67). Petitioner contends that one of ordinary skill would have known that small caps and covers can be misplaced and that it was desirable to attach them to the devices they protect to prevent loss. *Id.* at 19

(citing Ex. 1016 ¶ 130). Additionally, Petitioner asserts that “the memory card design of Matsumiya is visually and functionally very similar to a USB interface” which would “strongly suggest . . . that the cover design of Figs 15a/b would be as amenable for use with a USB flash device (as described in Deng)” because Matsumiya “shows a cover that can protect the contacts of contacts [sic] and design that are very similar to a USB device.” *Id.* (citing Ex. 1016 ¶¶ 68–72).

Patent Owner contends that one of ordinary skill in the art, seeking to protect the contacts of a USB flash memory device, would have “initially and irresistibly thought to put a cap on Deng’s USB connectors or make them retractable completely into the packaging,” and would not have “turned to Matsumiya’s teaching of a flip-over cover that only partially covers the connectors, especially where Matsumiya concerns a non-USB device with completely different electrical requirements.”¹² Resp. 29. Patent Owner relies on the testimony of Mr. Pearman that concern about protecting USB connectors would lead inventors to look for ways to completely enclose the contacts as much as possible. *See id.* at 28 (quoting Ex. 2014 ¶¶ 19–26). Additionally, Patent Owner asserts the combination of Matsumiya and Deng is based on “impermissible hindsight.” *Id.* In particular, Patent Owner argues that at least six modifications to Deng would be required to combine the teachings as proposed by Petitioner. *Id.* at 29. Patent Owner contends

¹² Patent Owner does not argue specifically that either of the references teaches away from the other; rather Patent Owner’s argument, as expressed above, is that if one were seeking to add a cover to Deng, one would chose a full cover rather than a cover that only partially covers the device. Resp. 29.

that the modifications are not what one skilled in the art would “naturally” make; rather “they are meant only to reach the patented claims.” *Id.*

In its Reply, Petitioner challenges Mr. Pearson’s testimony based on a difference of opinion regarding the development of USB technology, particularly the speed and capacity of available devices. Reply 14–15. Additionally, Petitioner asserts that the modifications needed to combine the teachings of Matsumiya and Deng are “simply a routine dimension adjustment.” Reply 16; *see* Ex. 1058 ¶ 7 (“One of ordinary skill in the art in 2002 would have been very capable of sizing the cover of Matsumiya to fit the device of Deng and, in doing so, would have widened the arms of Matsumiya to match the width of the case of Deng.”).

Petitioner’s argument is persuasive. Matsumiya expressly discloses that it is desirable to shield contacts on a “card-type peripheral device with a connector element . . . to prevent the accumulation of dust and dirt on the contacts when the device is not in use.” Ex. 1003, 1:41–45; *see id.* at 1:55–57 (same). Even though there are slight differences in the structure of the contacts in Matsumiya’s device as compared to that of Deng, Patent Owner has not persuaded us that those differences would deter one of ordinary skill in the art from following Matsumiya’s teachings when seeking to protect the contacts of Deng’s USB device. *See, e.g., KSR*, 550 U.S. at 417 (“if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill”). Thus, we do not agree with Patent Owner that Petitioner relies upon impermissible hindsight. Further, even in light of Mr. Pearson’s testimony that one of ordinary skill in the art would seek to

protect the contacts on a USB device with a full cover, we do not agree with Patent Owner that a skilled artisan would have avoided a cover such as Matsumiya's. In other words, just because a full cover may provide better protection, does not mean that Matsumiya fails to teach or suggest using its cover to protect electrical contacts. Accordingly, we find that one of ordinary skill in the art would have been prompted to modify Deng in light of Matsumiya.

4. *Conclusion of Obviousness*

For the foregoing reasons, after consideration of the entire record, we conclude that the elements of claims 8, 11, 12, 16, 18, and 20 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 8, 11, 12, 16, 18, and 20 would have been obvious over Matsumiya and Deng.

C. *Obviousness over Wu and Hoogesteger*

Petitioner asserts that the combination of Wu and Hoogesteger would have rendered obvious the subject matter of claims 8, 11, 12, 16, 18, and 20 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:

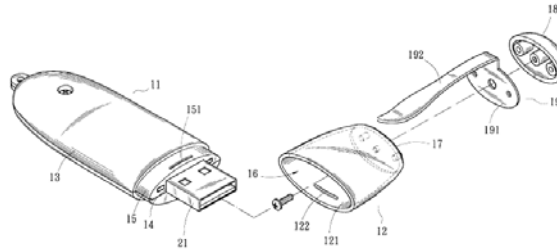
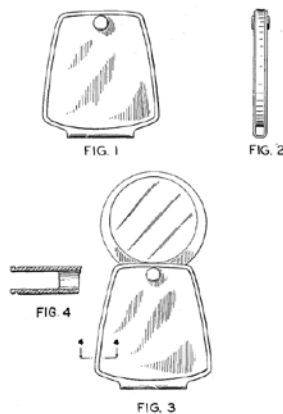


Fig. 3

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 ¶ 20). 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.* at 37 (quoting Ex. 1006, 1:29–31) (citing Ex. 1016 ¶ 121). Petitioner asserts that Hoogesteger "discloses another prior art swivel cover design – namely a swivel cover for a magnifying glass." *Id.* (citing Ex. 1008, Fig. 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 ¶¶ 128–131).

a. *Claim 8*

- i. “[a] flash memory apparatus comprising;”
“a flash memory main body;”
“a case within which a memory element is mounted;”
“a 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;”
“a cover;”
“a pair of parallel plate members facing each other and spaced by an interval corresponding to the thickness of the case;” and
“wherein the USB terminal piece is positioned within the inner space of the cover or exposed outside the cover by rotating the cover and case with respect to one another”

With respect to claim 8, Petitioner points to Wu as disclosing a flash memory apparatus. Pet. 40 (citing Ex. 1006, 3:37, Fig. 3). Petitioner asserts that Wu discloses “a flash memory main body.” Pet. 41 (citing Ex. 1006, Fig. 3 (element 13); Ex. 1016 ¶ 135). Wu discloses a cartridge member 10 having a chamber 11, which is “defined by a rigid wall 13 for receiving therein a memory unit 20.” Ex. 1006, 2:30–34. Petitioner contends that Wu discloses “a case within which a memory element is mounted.” Pet. 41 (citing Ex. 1016, 1:50–55; Ex. 106 ¶ 136). Petitioner also asserts that Wu discloses a “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.” Pet. 41–42 (citing Ex. 1006, 3:5–10,¹³ Figs. 2, 3; Ex. 1016 ¶ 137). Petitioner further contends that Hoogesteger discloses “a cover.” Pet. 42–43 (citing Ex. 1008, Figs. 3, 4). Petitioner asserts that Hoogesteger discloses “a pair of parallel plate members facing each other and spaced by an interval corresponding to the thickness of the case.” Pet. 43–44 (citing Ex. 1008, Figs. 3, 4, Ex. 1016 ¶¶ 141–143). Petitioner also asserts that “[i]n the combination of Wu and Hoogesteger, the cover of Hoogesteger would have been fitted to the USB device case of Wu. . . . [and] the USB device would have been hinged to the cover and rotate into and out of the cover.” Pet. 48. Patent Owner does not dispute these contentions. *See generally* Resp. After consideration of Petitioner’s evidence, we find that Matsumiya and Deng teach these limitations.

ii. *“the cover having an open front end, a closed rear end and a pair of lateral side openings”*

Petitioner contends that Wu discloses a cover “having an open front end, a closed rear end and a pair of lateral side openings.” Pet. 45–46 (citing Ex. 1008, Figs. 3, 4; Ex. 1016 ¶¶ 144–145).

Patent Owner asserts that “there would be no reason to modify Hoogesteger such that the cover has an open front end.” Resp. 37. Patent Owner contends that

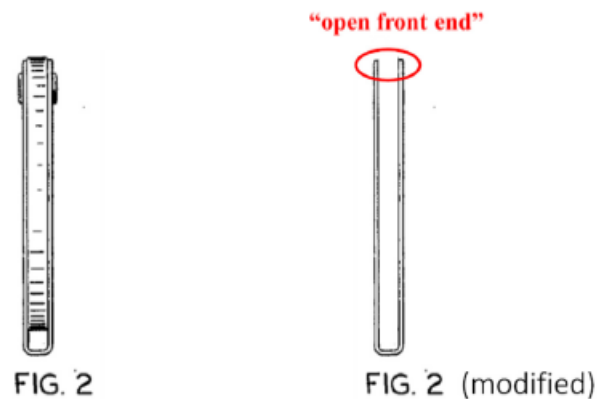
[t]he rivet used in Hoogesteger permanently holds the sides of the cover together with the lens in between pivoting on the shaft of the rivet. . . . Because the rivet closes the end opposite from

¹³ Petitioner cites to “Ex. 1016, col. 3:5-10” (Pet. 42), but we understand Petitioner to have intended to cite column 3, lines 5 through 10, of Wu, which is Exhibit 1006.

its closed rear end, one of ordinary skill in the art would not rely on Hoogesteger to design an apparatus with an open front end.

Id. at 37–38 (citing Ex. 2013 ¶ 122).

In its Reply, Petitioner asserts that the rivet is “not part of the cover” in Hoogesteger. Reply 17–18 (citing Ex. 1058 ¶ 14). Petitioner includes a modified version of Hoogesteger’s Figure 2, illustrating only the cover, as shown below:



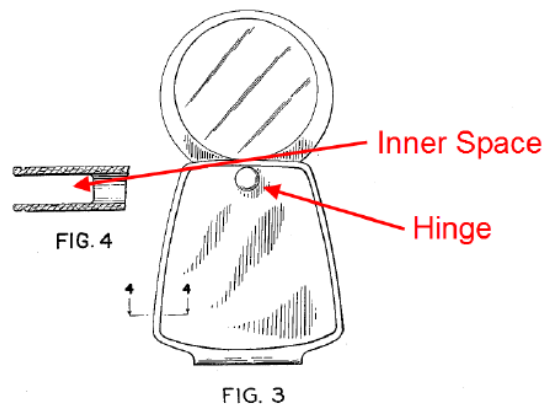
Petitioner’s annotated, “modified” version of Hoogesteger’s Figure 2 is reproduced above, which includes Petitioner’s labeling of an “open front end.” *Id.* at 18.

We agree with Petitioner that Hoogesteger discloses a cover and that the “top” of the cover, as shown in Hoogesteger’s Figure 2, teaches an open front end because the cover is not fixed to itself at that end. For comparison, the bottom of Hoogesteger’s Figure 2 and, more specifically, Figure 4, illustrate a closed end. The insertion of the rivet into the open end of the cover does not convert an open end into a closed end. Additionally, we discussed the claim language and the specification in the context of construing the term “open front end,” and concluded that the term describes the structure of the cover and that description does not change after the magnifier (in Hoogesteger’s embodiment) is attached. In other words,

attachment of Hoogesteger's magnifier to the cover via the rivet does not result in Hoogesteger's cover no longer having an open front end. Further, upon consideration of Petitioner's evidence, we find that Hoogesteger teaches a closed rear end and a pair of lateral side openings.

- iii. *“the parallel plate members defining an inner space receiving the case and being hinged to the case”*

Petitioner asserts that Hoogesteger discloses “the parallel plate members defining an inner space receiving the case and being hinged to the case.” Pet. 46–47 (citing Ex. 1008, Figs. 3, 4; Ex. 1016 ¶¶ 146–147). Petitioner provides the following annotated version of Hoogesteger's Figures 3 and 4 identifying an inner space and hinge:



Petitioner's annotated versions of Hoogesteger's Figures 3 and 4 are reproduced above, which include Petitioner's labeling of an “Inner Space” and a “Hinge.” *Id.* at 47. Petitioner contends that “[i]n the combination of Wu and Hoogesteger, the cover of Hoogesteger would have been hinged to the USB device case of Wu.” *Id.* (citing Ex. 1016 ¶ 148).

Patent Owner contends that Hoogesteger “shows a rivet extending through the opposing sides of the cover. . . . [and] [w]hile the cover and the lens, more particularly the lens holder can pivot with respect to each other,

they are not hinged to each other.” Resp. 37 (citing Ex. 2013 ¶ 112). Additionally, Patent Owner asserts that the combination of Wu and Hoogesteger “provides . . . no insights for how to hinge the cover together with the lens holder and the lens and provides no motivation for doing so.” *Id.*

As explained above, the specification does not prohibit a relationship where the case is connected to one component (e.g., a rivet), and that component is connected to the cover, thereby providing a hinged relationship. Accordingly, we find that Hoogesteger teaches “parallel plate members defining an inner space receiving the case and being hinged to the case.”

b. Claims 11 and 12

As discussed in the context of Petitioner’s first challenge, claim 11 depends from claim 8 and further 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 12 depends from claim 11. *Id.* at 6:9–11. Petitioner contends that Hoogesteger discloses the additional elements recited by claim 11. Pet. 49 (citing Ex. 1016 ¶¶ 152–154). Petitioner provides the following annotated version of Hoogesteger’s Figure 3:

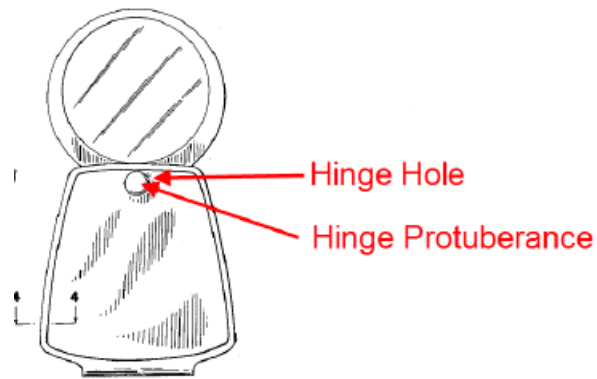


FIG. 3

Petitioner's annotated version of Hoogesteger's Figure 3 is shown above, illustrating what Petitioner has labeled as "Hinge Hole" and "Hinge Protuberance." *Id.*

Patent Owner asserts that Hoogesteger discloses a rivet that "extends through the cover and the magnifier holder." Resp. 39. Patent Owner contends that "[b]ecause the retention devices in Hoogesteger are on the cover and not the lens holder, the retention devices cannot be equated with the recitation of 'a hinge protuberance on at least one side of the case.'" *Id.* at 40 (citing Ex. 2013 ¶ 112). Patent Owner provides the following enlarged illustration of a portion of Hoogesteger's Figure 2:



Patent Owner's enlarged version of the top portion of Hoogesteger's Figure 2 shows a side view of the magnifier, including the attachment between the cover and magnifier lens. *Id.* at 39.

In its Reply, Petitioner argues that the rivet is “located on and makes contact with the lens holder on the side.” Reply 18. Petitioner also asserts that Patent Owner’s argument “incorrectly assumes that the claim term ‘on’ requires more than simply being located on a particular side.” *Id.* Rather, Petitioner contends that the broadest reasonable construction of “on at least one side” applies, “which only requires that the hinge protuberance be located on one side of the case, which it is in Hoogesteger.” *Id.*

The above discussion reflects that, as with Matsumiya, Patent Owner’s argument is based on an incorrect construction of the term “on at least one side of the case.” We agree with Petitioner that the rivet in Hoogesteger is a “hinge protuberance on at least one side of the case” because it protrudes from the surface of a side of the case and acts to hinge the case and cover. Thus, Petitioner has shown by a preponderance of the evidence that Hoogesteger discloses “a hinge protuberance on at least one side of the case.”

Claim 12 depends from claim 11 and further recites “wherein there is a hinged protuberance on a front side and a back side of the case and a hinge hole in each of the parallel plate members.” Ex. 1001, 6:9–11. Petitioner relies upon its arguments directed to claim 11 and, particularly, Hoogesteger’s Figures 2 and 3 as disclosing the elements of claim 12. Pet. 50 (citing Ex. 1016 ¶¶ 155–157). Patent Owner’s argument directed to claim 12 depends entirely on its argument regarding the phrase “hinge protuberance on at least one side of the case” as recited in claim 11. See, e.g., Resp. 39. After consideration of Petitioner’s evidence, we find that Hoogesteger teaches the recited elements of claim 12 as the figures indicate the existence of a hinge hole in each of the parallel plate members.

c. Claims 16, 18, and 20

Each of claims 16, 18, and 20 depends from claim 8 and adds a further limitation with respect to the shape of either the case or the cover as noted *supra* Section III.B.3.b. Even though Petitioner identifies where each of the elements added by claims 16, 18, and 20 is disclosed by Wu or Hoogesteger, Petitioner contends that each additional element is “a non-functional and purely decorative feature. . . . [that] cannot be relied on to preserve the validity of a claim.” Pet. 51 (citing *In re Seid*, 161 F.2d at 231), 52 (same), 53 (same).

With respect to claim 16, Petitioner asserts that Wu discloses a “rectangular-like” case. Pet. 50–51 (citing Ex. 1006, Figs. 1–3; Ex. 1016 ¶¶ 158–159). Patent Owner does not contend that Wu fails to disclose this element of the claim. *See generally* Resp. We find that Wu teaches a rectangular-like¹⁴ case.

With respect to claim 18, Petitioner contends that Wu discloses a case with a curved front end. Pet. 51–52 (citing Ex. 1006¹⁵, Fig. 3; Ex. 1016 ¶¶ 156–161). Patent Owner does not contend that Wu fails to disclose this element of the claim. *See generally* Resp. We find that Wu teaches a case with a curved front end.

With respect to claim 20, Petitioner contends that Hoogesteger discloses that the front end of the cover has a curved shape. Pet. 52–53 (citing Ex. 1008, Fig. 3). Patent Owner does not contend that Hoogesteger

¹⁴ We note that “rectangular-like” does not require an exact rectangle.

¹⁵ Petitioner’s claim chart states “Wu (Ex. 1007) discloses this limitation. *See* Fig. 3 (partial below).” Pet. 51. Wu, however, is Exhibit 1006, and the Figure 3 included in the Petition is that of Wu. Accordingly, we understand that Petitioner intended to cite to Exhibit 1006.

fails to disclose this element of the claim. *See generally* Resp. We find that Hoogesteger teaches that the front end of the cover has a curved shape.

d. Reason to Combine

Petitioner asserts that one of ordinary skill in the art “would understand that the USB connectors on a USB storage device can be damaged and that it is advantageous to have a protective cover.” Pet. 37 (citing Ex. 1016 ¶ 121). Petitioner contends that one of ordinary skill would “understand from the prior art that there are a variety of suitable cover designs that can be used to protect handheld objects – including a swivel cover.” *Id.* (citing Ex. 1016 ¶ 130). Petitioner thus asserts that one of ordinary skill in the art would have “had good reason to use a swivel cover design as taught by . . . [Hoogesteger] to protect the USB contacts of Wu.” *Id.* at 39 (citing Ex. 1016 ¶¶ 128–131).

Patent Owner raises two arguments contending that it would not have been obvious to modify Wu in light of Hoogesteger. We address each. First, Patent Owner asserts that modifying Wu by changing Wu’s cap to a cover as disclosed by Hoogesteger would destroy the functionality of Wu because Wu would no longer have a tight fitting cap. Resp. 35–36, 40–41.

Patent Owner fails to identify any teaching in Wu that requires or otherwise necessitates a tight fitting cap. *See* Reply 19 (“Wu never teaches the importance of a tight cap.”). Wu’s cap serves a protection purpose and even if a full cover may provide better protection, that does not mean one of ordinary skill in the art would not have been prompted to modify Wu by adding a cover that rotated into position.

Second, Patent Owner contends that Wu desired a smaller cover and “specifically criticized a ‘protective case [that] enlarges the space occupied

by the memory device in the pocket or the suitcase.’” Resp. 36 (quoting Ex. 1006, 1:32–33), 40–41 (same). Petitioner responds by noting that Wu’s critique of certain cases is directed to bulky cases, such as those typically used to protect glasses, not a cover such as that taught by Hoogesteger. Reply 19 (citing Ex. 1006, 1:34–38; Ex. 1058 ¶ 15).

We agree with Petitioner that Wu’s teaching regarding other cases would not have led one of ordinary skill in the art away from, or discouraged the use of, a swivel cover, as disclosed by Hoogesteger. Wu criticizes bulky cases and those that require opening before removing and using a device stored inside, but neither criticism is directed toward a swivel cover, which is neither bulky nor requires opening and removing a device before use. *See* Ex. 1006, 1:29–38 (“A hard plastic case has been developed for enclosing the memory device However, such protective case enlarges the space occupied by the memory device in the pocket or the suitcase. Moreover, when it is desired to plug the USB plug into the computer main frame, the user must first open the protective case and then take out the memory device to connect with the . . . main frame. Such procedure is quite troublesome.”). Accordingly, we find that one of ordinary skill in the art would have been prompted to modify Wu to result in a swivel cover as taught by Hoogesteger. *See KSR*, 550 U.S. at 416 (“when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result” (citation omitted)).

4. *Conclusion of Obviousness*

For the foregoing reasons, after consideration of the entire record, we conclude that the elements of claims 8, 11, 12, 16, 18, and 20 are taught by

Wu and Hoogesteger 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. 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 8, 11, 12, 16, 18, and 20 would have been obvious over Wu and Hoogesteger.

D. 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).¹⁶ Paper 51, 1 (“Pet. Mot.”). Patent Owner filed an Opposition (Paper 59) and Petitioner filed a Reply (Paper 61). 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.

E. 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 56, 1 (“PO Mot.”). Patent Owner's challenge

¹⁶ 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 claims 8, 11, 12, 16, 18, and 20 are unpatentable as obvious over Matsumiya and Deng, and as obvious over Wu and Hoogesteger.

V. ORDER

For the reasons given, it is

ORDERED that, based on a preponderance of the evidence, claims 8, 11, 12, 16, 18, and 20 of U.S. Patent No. 6,926,544 B2 are unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude (Paper 51) is *denied* as moot;

FURTHER ORDERED that Patent Owner's Motion to Exclude (Paper 56) 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.

IPR2015-00149
Patent 6,926,544 B2

For PETITIONER:

DAVID M. HOFFMAN
Fish & Richardson P.C.
IPR37307-0004IP1@fr.com

MARTHA J. HOPKINS
Law Office of S.J. Christine Yang
mhopkins@sjclawpc.com

For PATENT OWNER:

MATTHEW C. PHILLIPS, ESQ.
Renaissance IP Law Group LLP
matthew.phillips@renaissanceiplaw.com

DEREK MEEKER
Renaissance IP Law Group LLP
derek.meeker@renaissanceiplaw.com

KEVIN B. LAURENCE, ESQ.
Renaissance IP Law Group LLP
kevin.laurence@renaissanceiplaw.com