

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EVE ENERGY CO., LTD.,
Petitioner,

v.

VARTA MICROBATTERY GMBH,
Patent Owner.

IPR2022-01484
Patent 9,153,835 B2

Before CHRISTOPHER L. CRUMBLY, JON B. TORNQUIST, and
BRIAN D. RANGE, *Administrative Patent Judges*.

RANGE, *Administrative Patent Judge*.

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

I. INTRODUCTION

Eve Energy Co., LTD. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 14–25 of U.S. Patent No. 9,153,835 K1 (Ex. 1027, “the ’835 patent”). Paper 1 (“Pet.”).¹ VARTA Microbattery GMBH (“Patent Owner”) filed a sealed Preliminary Response (Paper 7) and public redacted version of the sealed Preliminary Response (Paper 8 (“Prelim. Resp.”)). With permission to file a Reply, Petitioner filed a supporting sealed Reply (Paper 12 (“Prelim. Reply”)) and public redacted version of the Reply (Paper 13). Patent Owner filed a sealed Sur-Reply (Paper 15) and public redacted version of the sealed Sur-Reply (Paper 16 (“Prelim. Sur-Reply”)).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a) (2020). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

¹ USPTO records show that challenged claims 14–25 are the result of an Inter Partes Review Certificate issued April 7, 2022 for IPR2020-01212. *See infra* n.2. Neither party has introduced any record evidence of the wording of the challenged claims. Accordingly, we add the trial certificate from that proceeding as Exhibit 3001. The certificate refers to U.S. Patent 9,153,836 K1, using the type code for trial certificates. *See* Exhibit 3001. We will herein, when referring to the ’836 patent, reference the claims of U.S. Patent 9,153,835 K1 (i.e., of the Certificate and as also set forth in the Petition’s listing of claims (Pet. 14–25)) and the disclosure of U.S. Patent 9,153,835 B2 (Ex. 1027).

After considering the Petition, the Preliminary Response, the Preliminary Reply, the Preliminary Sur-Reply, and the evidence of record, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one challenged claim. Accordingly, we do not institute an *inter partes* review of any challenged claim.

II. BACKGROUND

A. Related Matters

The parties identify twelve district court cases that involve the '835 patent: *Audio Partnership LLC et al. v. VARTA Microbattery GmbH*, No. 1:22-cv-01073 (N.D. Ill.); *VARTA Microbattery GmbH v. Guangdong Mic-Power New Energy Co., Ltd.*, No. 2:22-cv-00025 (E.D. Tex.); *VARTA Microbattery GmbH v. Eve Energy Co., Ltd.*, No. 2:21-cv-00399 (E.D. Tex.); *VARTA Microbattery GmbH v. Audio Partnership LLC, et al.*, No. 2:21-cv-00400 (E.D. Tex.); *VARTA Microbattery GmbH v. GN Audio A/S et al.*, No. 1:21-cv-00134 (D. Del.); *VARTA Microbattery GmbH v. Guangdong Mic-Power New Energy Co., Ltd.*, No. 2:21-cv-00036 (E.D. Tex.); *VARTA Microbattery GmbH v. Costco Wholesale Corporation*, No. 2:20-cv-0051 (E.D. Tex.); *VARTA Microbattery GmbH v. Amazon.com, Inc.*, No. 2:20-cv-0052 (E.D. Tex.); *VARTA Microbattery GmbH v. Best Buy Co., Inc.*, No. 2:20-cv-0054 (E.D. Tex.); *VARTA Microbattery GmbH v. PEAG, LLC*, No. 2:20-cv-0071 (E.D. Tex.); *VARTA Microbattery GmbH v. Audio Partnership LLC, et al.*, No. 2:20-cv-00138 (E.D. Tex.); and *VARTA Microbattery GmbH v. Samsung Electronics America, Inc.*, No. 2:20-cv-

00029 (E.D. Tex.). Pet. 100–02; Paper 5, 2–3. Petitioner also indicates the ’835 patent was the subject of IPR2020-01212.² Pet. 102; Paper 5, 5.

B. Asserted Grounds of Unpatentability

The Petition is supported by a Declaration of Marc Juzkow (Ex. 1002) and asserts the following grounds of unpatentability (Pet. 18–19):

	Claims Challenged	35 U.S.C. §³	References/Basis
1	14–25	103(a)	Kobayashi, ⁴ Kaun, ⁵ Brenner ⁶
2	14–25	103(a)	Brown, ⁷ Higuchi, ⁸ Kaun, Brenner, Arai ⁹

² In IPR2020-01212, the outcome of the Final Written Decision was: “Petitioner has shown by a preponderance of the evidence that claims 1–12 of the ’835 patent are unpatentable. We grant Patent Owner’s Revised Contingent Motion to Amend as to proposed substitute claims 14–25.” IPR2020-01212, Final Written Decision 4 (issued Jan. 5, 2022).

³ The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, took effect on March 16, 2013. The ’835 patent claims priority to applications with filing dates before this date. *See* Ex. 1027, code (30). For the purposes of this Decision, pre-AIA statutes apply.

⁴ JP 2007294111A, published November 8, 2007, Ex. 1004 (“Kobayashi”) (Japanese Patent Application with foreign translation and declaration therefor).

⁵ US 2007/0160901 A1, published July 12, 2007, Ex. 1023 (“Kaun”).

⁶ DE 10 2005 058 132 A1, published June 6, 2007, Ex. 1005 (“Brenner”).

⁷ US 3,748,182, published July 24, 1973, Ex. 1006 (“Brown”).

⁸ CN 101286572A, published October 15, 2008, Ex. 1007 (“Higuchi”) (Chinese Patent Application Publication with foreign translation and declaration therefor).

⁹ US 2006/124973 A1, published June 15, 2006, Ex. 1020 (“Arai”).

C. The '835 patent (Ex. 1027)

The '835 patent is titled “BUTTON CELLS AND METHOD FOR PRODUCING SAME.” Ex. 1027, code (54). The '835 patent

relates to button [battery] cells comprising two metallic housing half-parts separated from one another by an electrically insulating seal and which form a housing with a flat bottom area and a flat top area parallel to it, as well as within the housing, an electrode-separator assembly comprising at least one positive and at least one negative electrode, which are in the form of flat layers and are connected to one another by at least one flat separator, and to a method for producing such button cells.

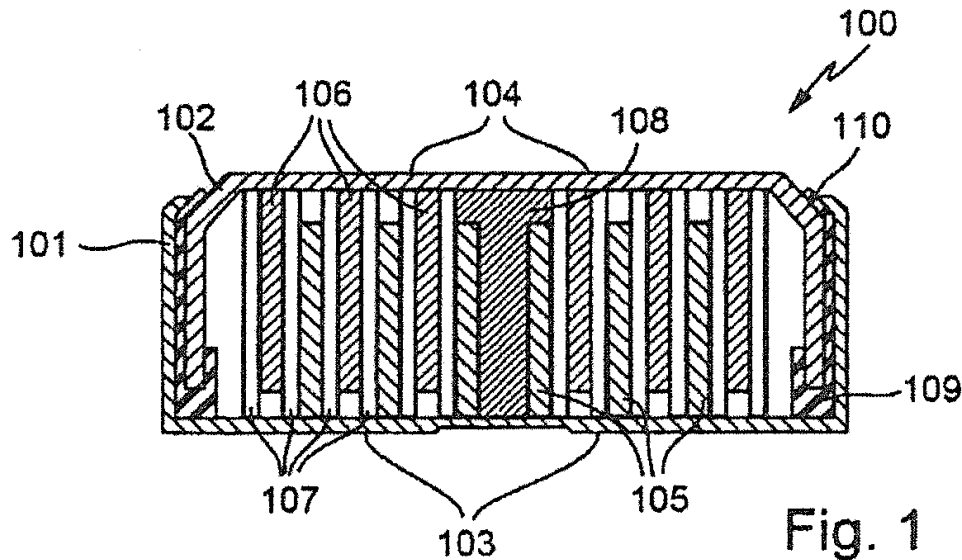
Id. at 1:16–24.

According to the patent, “[b]utton cells normally have a housing consisting of two housing half-parts, a cell cup and a cell top.” *Id.* at 1:28–29. This housing contains “electrochemically active materials.” *Id.* at 1:37–56. Rather than placing these materials in the housing “in the form of individual electrodes, in the form of tablets, separated from one another by a separator,” they may instead be made into “prefabricated electrode-separator assemblies” that are “placed flat one on top of the other,” making “stacks of any desired height.” *Id.* “[I]t has been found that button cells having a stack of electrodes and separators very quickly start to leak,” requiring closing the housings “in a liquid-tight manner.” *Id.* at 2:4–5.

“Traditionally,” this has been accomplished “by beading the edge of the cell cup over the edge of the cell top in conjunction with a plastic ring, which is arranged between the cell cup and the cell top and at the same time acts as a sealing element.” *Id.* at 2:4–8. “[A]lternatively, it is also possible to manufacture button cells in which the cell cup and the cell top are held

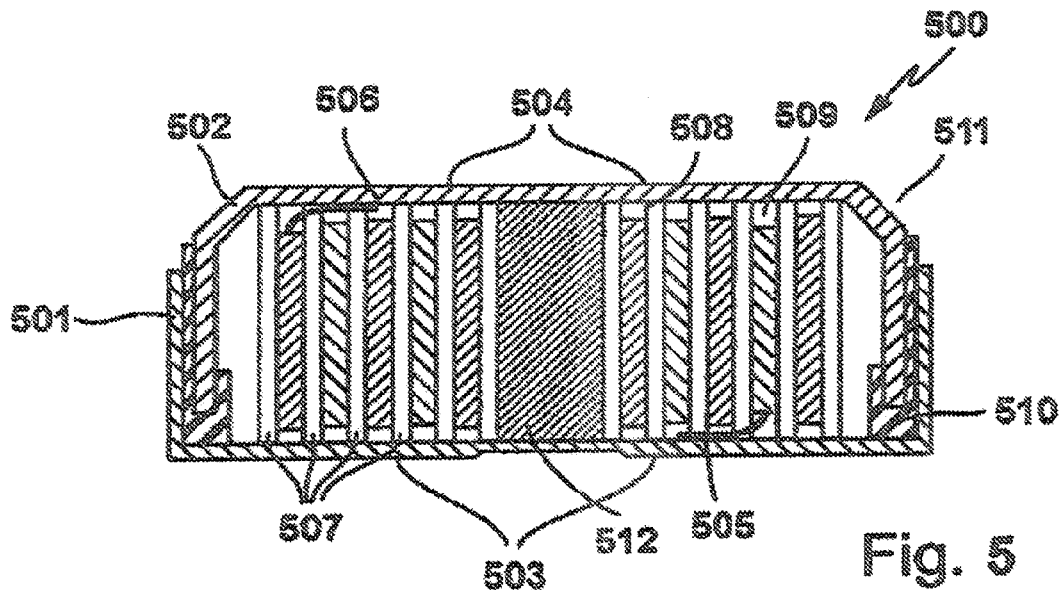
together in the axial direction exclusively by a force-fitting connection, and which do not have a beaded-over cup edge.” *Id.* at 2:11–14.

Figure 1 of the ’835 patent, reproduced below, illustrates “button cell 100” that is closed using the traditional method:



Id. at 10:4–12, Fig. 1. In Figure 1, button cell 100 “has a metallic cup part 101 and metallic top part 102” that “are connected to one another, sealed by means of a seal 109,” with “edge 110 of the cell cup 101 [being] beaded inward over the edge of the cell top 102.” *Id.*

A similar cell that is closed without being beaded over is illustrated in Figure 5 of the ’835 patent, reproduced below:



Id. at 12:27–13:5, Fig. 5. Figure 5 illustrates “button cell 500” with “a metallic cup part 501 and a metallic top part 502” that “are connected to one another, sealed by means of a seal 510.” *Id.* at 11:23–27. “The cell top 502 is inserted into the cell cup 501 such that the casing areas of the cell top and the cell cup overlap, with the internal radius of the cell cup 501 in the overlapping area being essentially constant in the direction of the cut edge.” *Id.* at 11:32–35. In this arrangement, “the edge of the cell cup 501 is not beaded over the edge 511 of the cell top 502.” *Id.* at 11:36–39. This results in “a button cell which is not beaded over.” *Id.*

The ’835 patent expresses a preference for an “exclusively force-fitting connection between the housing half-parts,” where the “button cell does not have a beaded-over cup edge” and “is closed without being beaded over.” *Id.* at 6:49–53.

D. Illustrative Claim

Claim 14 is an illustrative independent claim. Ex. 3001. Claim 14 is reproduced below (*see supra* n.1) with Petitioner's identifiers of claim elements (Pet. 10–11).

[14P] A button cell comprising:

[14A] a housing cup including a flat bottom area and a cup casing extending along an axial direction and a housing top including a flat top area and a top casing extending along the axial direction, the housing cup and the housing top separated from one another by an electrically insulating seal and which form a button cell housing with a flat bottom area and a the flat top area parallel to the flat bottom area,

[14B] a rechargeable lithium-ion electrode-separator assembly disposed within the button cell housing comprising at least one positive electrode and at least one negative electrode in the form of flat layers and connected to one another by at least one flat separator, and

[14C] an insulating mean,

[14D] wherein the electrode layers are aligned essentially at right angles to the flat bottom area and the flat top area,

[14E] wherein the cup casing partially overlaps the top casing in an overlapping area, the top casing is disposed radially inward of the cup casing in the overlapping area, and the housing cup and the housing top are held together by a force-fitting connection, and the button cell is closed without being beaded over;

[14F] wherein the cup casing includes a first part proximal to the flat bottom area and a second part disposed in the overlapping area, the first part of the cup casing being disposed radially inward with respect to the second part;

[14G] wherein the rechargeable lithium-ion electrode-separator assembly is in the form of a spiral winding having end faces defining side surfaces of the spiral winding facing in the axial direction relative to the flat bottom area and the flat top area,

[14H] wherein at least a first electrode of the at least one positive electrode or the at least one negative electrode is connected to the button cell housing via a metal foil output conductor including a flat portion extending in a radial direction perpendicular to the axial direction along one of the end faces and connected to one of the flat bottom area and the flat top area via a weld;

[14I] wherein the insulating means is arranged between the end faces of the spiral winding and the housing cup and the housing top, respectively.

Ex. 3001 1:7–50; Pet. 10–11.

III. ANALYSIS

A. *Legal Standard*

A patent claim is unpatentable under 35 U.S.C. § 103(a) 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.” *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 ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. *Level of Ordinary Skill in the Art*

In order to determine whether an invention would have been obvious at the time the application was filed, we consider the level of ordinary skill in the pertinent art at the critical time. *Graham*, 383 U.S. at 17. The

resolution of this question is important because it allows us to “maintain[] objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quotation omitted).

Petitioner asserts that a person of ordinary skill in the art (POSITA) “would have had at least a bachelor’s degree in mechanical engineering, or a similar field, such as materials engineering, chemical engineering, or physics with 3–4 years of experience in the field of battery design and manufacturing, including electrochemical cell packaging systems.” Pet. 20–21 (citing Ex. 1002 ¶¶ 11–13.). Patent Owner does not respond aside from “reserv[ing] the right to dispute Petitioner’s definition of a POSA if an IPR is instituted” and stating “Petitioner’s arguments fail under its proffered definition of a POSA.” Prelim. Resp. 20.

For purposes of this Decision, we adopt Petitioner’s asserted level of ordinary skill in the art.

C. Claim Construction

In an *inter partes* review proceeding based on a petition filed on or after November 13, 2018, a patent claim shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (as amended Oct. 11, 2018). This rule adopts the same claim construction standard used by Article III federal courts, which follow *Phillips v. AWH Corp.*, 415 F.3d

1303 (Fed. Cir. 2005) (en banc), and its progeny. Under this standard, the words of a claim are generally given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *See Phillips*, 415 F.3d at 1312–13.

Petitioner proposes construing a single term, “insulating means.” Pet. 21–22. Patent Owner responds that no term requires construction at this stage of the proceeding. Prelim. Resp. 20–21. For the reasons discussed below, we are able to determine whether to institute trial without construing “insulating means,” so we do not construe this term. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

In urging that we not institute trial, Patent Owner argues that “[t]he ’835 patent distinguishes button cells that are held together by crimping from those held together with a force-fit,” noting that the challenged claims require the latter type of button cell. Prelim. Resp. 53.

The challenged claims each recite a “housing cup” and a “housing top” that “are held together by a force-fitting connection.” Ex. 3001, 1:28–29 (claim 1), 2:51–52 (claim 23). The parties disagree about whether the references on which Petitioner relies teach or suggest this limitation. Pet. 28–32, 64–66; Prelim. Resp. 53–61. As discussed more completely below, we are able to determine whether to institute trial without deciding precisely what the ’835 patent means when it describes two parts as “held together by a force-fitting connection.” Accordingly, we need not, and do not, construe

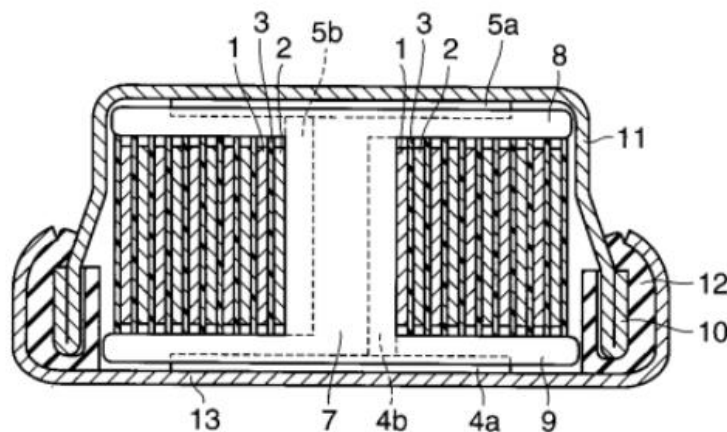
this term expressly. See *Nidec*, 868 F.3d at 1017 (quoting *Vivid Techs.*, 200 F.3d at 803).

Although we need not decide the precise meaning of “held together by a force-fitting connection” in order to decide whether to institute trial, we note (1) that, without some evidence to the contrary, a battery casing whose half-parts are “held together by” a particular condition must be a battery casing whose half-parts would no longer be held together if the condition were not present, and (2) that neither party has directed us to any evidence to the contrary. Accordingly, whatever a “force-fitting connection” is, a battery made in accordance with the teachings of the prior art is not a battery that is “held together by a force-fitting connection” unless that battery would cease to be held together in the absence of the “force-fitting connection.”

D. Overview of the Asserted Art

1. *Kobayashi (Ex. 1004)*

Kobayashi “relates to a small battery (for example, a button-type battery or a coin-type battery) provided with a wound electrode group.” Ex. 1004 ¶ 1. It discloses an example battery that is illustrated in Figure 1, reproduced below:

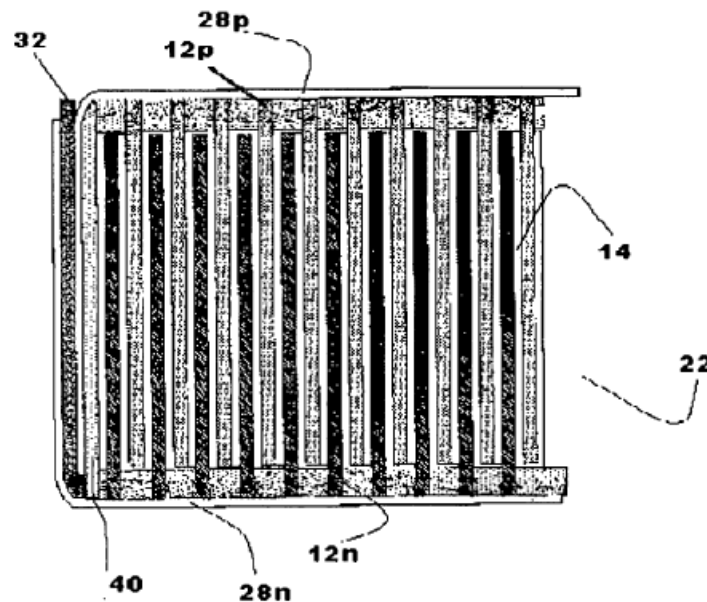


Id. at Fig. 1. Figure 1 depicts “[a] cross-sectional view of [a] battery” in which “cathode case 13” and “anode case 11” were fitted to one another and “sealed by perform[ing] a crimping process on the cathode case 13.”

Id. ¶¶ 25, 35.

2. *Kaun (Ex. 1023)*

Kaun relates to a battery having high, specific power and energy outputs per weight and volume. Ex. 1023 ¶ 2. We reproduce Kaun’s Figure 8 below.



Kaun Figure 8 illustrates a “radial edge section of a bipolar electrochemical device incorporating” Kaun’s assembly. *Id.* ¶ 37.

3. *Brenner (Ex. 1005)*

Brenner “relates to a galvanic element having a novel housing, and to a method for production thereof.” Ex. 1005 ¶ 1. Figure 2 of Brenner, reproduced below, depicts “in cross section [a] partial view of the housing 100 of a preferred embodiment of” Brenner’s invention:

Brown's figure illustrates a sectional view of a sealed button type primary cell including a button type cell casing. *Id.* at 1:64–65.

A sealed button type primary cell 10 includes a button type cell casing. *Id.* at 1:68–69. Cell 10 has a case 11 and a cover 12 each made of electrically conductive material forming spaced-apart negative and positive terminal walls. *Id.* at 1:70–2:1. Case 11 and cover 12 are insulated electrically from each other by an electrically insulating gasket 13 that provides a leak-tight seal therebetween. *Id.* at 2:2–5.

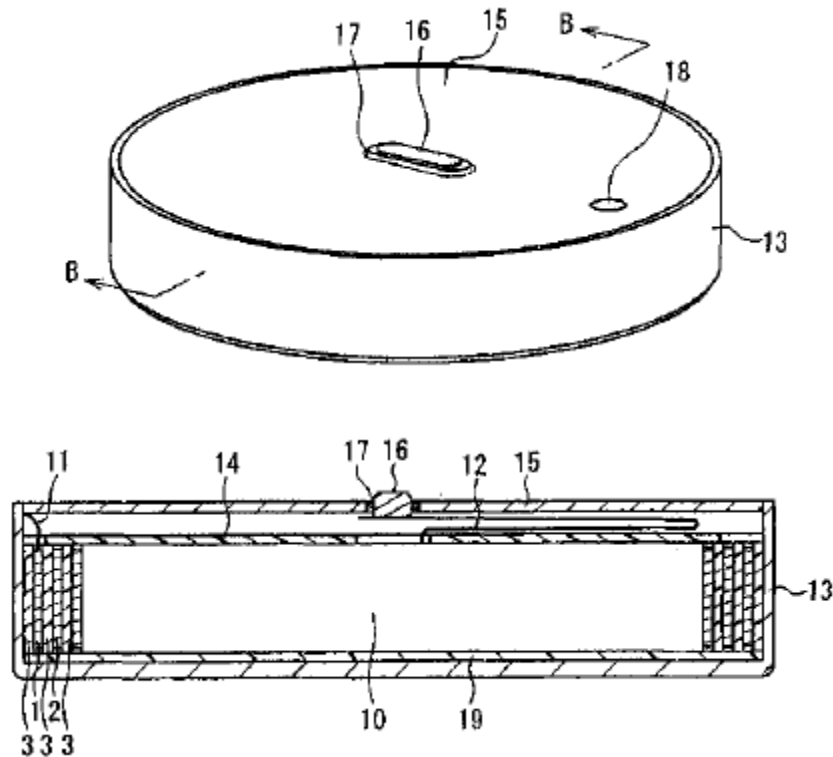
A first elongated electrically conductive member 14 in the preferred form of a threaded stud is affixed centrally to the exterior surface of case 11. *Id.* at 2:5–8. Cover 12 has a central aperture 15 therein. *Id.* at 2:8–9. A second elongated electrically-conductive, hollow-threaded member 16 is affixed to the interior surface of cover 12 and in communication with aperture 15. *Id.* at 2:9–13. The threaded first member 14 of one cell is tapped into the threaded second member 16 of another cell. *Id.* at 2:38–40.

A winding 17 of cathode 18, separator 19 with electrolyte, and anode 20, is encapsulated within 15 case 11 and cover 12. *Id.* at 2:13–15. A metallic connecting strip 21 contacts cathode 18 and the interior surface of case 11. *Id.* at 2:15–16. Winding 17 is otherwise insulated electrically from case 11 by an electrically insulating washer 22. *Id.* at 2:17–18. Winding 17 is insulated electrically from cover 12 by an electrically-insulating washer 23. *Id.* at 2:18–20. Hollow member 16 is in electrical contact with anode 20. *Id.* at 2:20–21.

5. *Higuchi (Ex. 1007)*

Higuchi is a Chinese patent application that relates to a battery having a winding of strip-shaped positive and negative electrodes sandwiching a

strip-shaped separator therebetween. Ex. 1007, (57). We reproduce Higuchi's Figures 5A–B below.



Higuchi's Figures 5A–5B respectively illustrate a perspective view of the state in which a battery can and cap are joined by laser-welding and a cross-sectional view taken along the B–B line (of the perspective view). *Id.* at 6.¹⁰ A winding 10 (only outer periphery cross-sectioned/shown in figure) is placed in the container formed by a cap 15 and battery can 13. *Id.* A lower insulating plate 19 is arranged on the bottom of the battery can 13. *Id.* The winding 10 has a structure in which the strip-shaped separator 3 is interposed between the strip-shaped positive electrode 1 and the strip-shaped negative electrode 2. *Id.* The positive electrode lead 11 is inserted between the battery can 13 and the cap 15, such that the battery can 13 and cap 15 act

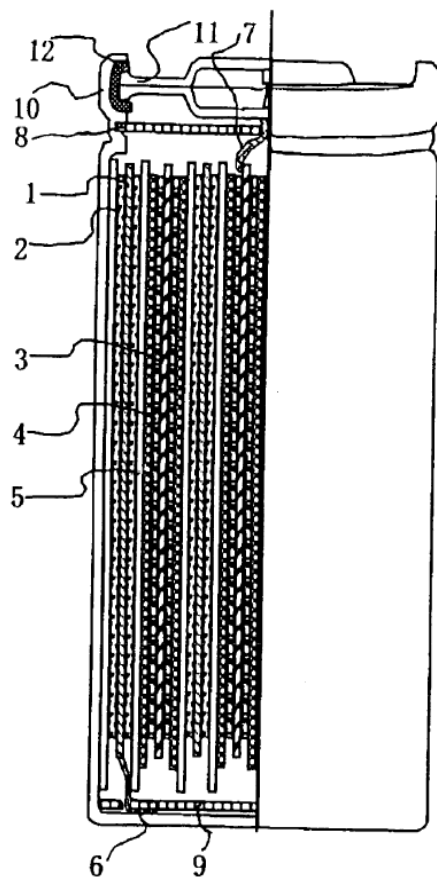
¹⁰ Citation is to the English translation.

as the positive electrode terminal (but may alternatively be the negative electrode). *Id.*

6. *Arai (Ex. 1020)*

Arai relates to a storage device for storing and releasing electric energy, a module thereof, and an electric vehicle using the module. Ex. 1020

¶ 1. We reproduce Arai's Figure 1 below.



Arai's Figure 1 illustrates a partial sectional-view of a cylindrical lithium secondary battery. *Id.* ¶ 38. A battery can 10 houses a three-layer winding of electrodes and separator 5 therebetween. *Id.* ¶ 82. The can 10 and a lid 11 are crimped to each other to seal the battery. *Id.* A positive electrode tab 7 and the negative electrode tab 6 are respectively welded to the positive

electrode and negative electrodes and connected to the can 10 and lid 11 (*Id.* ¶ 83); the negative electrode tab 6 being also welded to the can (*Id.* ¶ 82).

E. Unpatentability Grounds

1. Ground 1: Kobayashi, Kaun, and Brenner

Petitioner asserts that claims 14–25 would have been obvious in view of Kobayashi, Kaun, and Brenner. Pet. 22–57. Patent Owner disagrees.

Prelim. Resp. 52–58

Among other limitations, claim 14 of the '835 patent recites a “cup casing” and a “top casing,” “wherein the cup casing partially overlaps the top casing in an overlapping area, the top casing is disposed radially inward of the cup casing in the overlapping area, [and] the housing cup and the housing top are held together by a force-fitting connection.” Ex. 3001, 1:25–29. Claim 23 recites an identical limitation. *Id.* at 2:48–53. The remaining challenged claims each depend, directly or indirectly, from one of these two claims. *Id.* at 1:52–2:34, 2:54–57, 4:5–20. Accordingly, all of the challenged claims include a limitation requiring that “the housing cup and the housing top [be] held together by a force-fitting connection.” *See* 37 C.F.R. § 1.75(c). Therefore, to show the obviousness of any of these claims, Petitioner must show that the asserted prior art teaches or suggests a “housing cup” and a “housing top” that “are held together by a force-fitting connection.” As discussed above, a battery made in accordance with the teachings of the prior art is not a battery that is “held together by a force-fitting connection” unless that battery would cease to be held together in the absence of the “force-fitting connection.”

Petitioner argues that the combined teachings of Kobayashi, Kaun, and Brenner teach this “force-fitting connection” limitation, and we address each reference below. Pet. 39–42.

With respect to Kobayashi, Petitioner does not argue that Kobayashi teaches or suggests a housing cup and housing top held together by a force-fitting connection. Pet. 28–29. “[T]he battery of example 1 is illustrated in FIG. 1” of Kobayashi, which is replicated and discussed above. Ex. 1004 ¶ 25. According to Kobayashi, the “battery of example 1” was “sealed by perform[ing] a crimping process on the cathode case 13” “[a]fter fitting the cathode case 13 to the anode case 11.” *Id.* ¶ 35. As shown in Figure 1 of Kobayashi, the edges of cathode case 13 have been drawn inward over the edges of anode case 11, with “ring-shaped insulation gasket 12” located between those edges. *Id.* ¶ 33, Fig. 1. Thus, the evidence of record indicates that Kobayashi, contrary to the requirements of claim 14, uses a beaded over arrangement to hold the housing cup and housing top together. Petitioner does not present evidence to the contrary.

With respect to Kaun, Petitioner reproduces Kaun Figure 8 and argues that Kaun has overlapping areas that provide a seal without using a “beaded over” structure. Pet. 29–30. Petitioner argues that a person having ordinary skill in the art would have known that compression through radial compression would be an “obvious and known choice” for achieving the seal. *Id.* at 30; *see also Id.* at 36–38 (explaining reason to combine based on sealing). Similarly, Petitioner argues that battery expansion during charging and discharge “would result in radial forces.” *Id.* at 31.

Even if we accept Petitioner’s position that Kaun suggests radial forces around its seal, Petitioner has not presented sufficient evidence that

such forces hold a housing cup and housing top together. With respect to the key “held together” recitation, Petitioner’s only argument or evidence in the Petition is a sole quote purportedly from Patent Owner’s expert, Dr.

Peckerar:

PO’s expert in IPR2020-01212, Dr. Peckerar, describes a force-fit connection as “the force that you would apply to insert the cup in the can, created friction between the cup and can side walls that ultimately hold the product together. Ex. 1032 at 289:6–10.

Pet. 30–31. Petitioner’s statement regarding Dr. Peckerar’s prior testimony is problematic because we cannot discern, on this record, evidence supporting the statement. Exhibit 1032 is a deposition transcript of William Gardner—not Dr. Peckerar—and does not have a page 289.¹¹

Petitioner also, at the conclusion of five pages addressing all aspects of element 14(E), cites to “Ex. 1002, ¶¶ 125–135.” Within that exhibit, Petitioner’s witness, Dr. Juzkow, also erroneously cites Exhibit 1032 as providing the statement from Dr. Peckerar. Ex. 1002 ¶ 128. Much like the Petition, Dr. Juzkow discusses lateral forces and sealing, but other than the poorly cited quote to purported testimony of Dr. Peckerar, Dr. Juzkow is silent as to a force fit being sufficient to hold Kaun’s housing cup and housing top together. *Id.* ¶¶ 125–135.

¹¹ Though the Board does not typically “play archaeologist with the record” (*DeSilva v. DiLeonardi*, 181 F.3d 865, 866–67 (7th Cir. 1999)) and search the papers for support for a party’s erroneous citations, on the chance that Petitioner’s citation was a typographical error we have attempted to discern another source for the quoted language from Dr. Peckerar. The record includes one volume of Dr. Peckerar’s deposition testimony in IPR2020-01212, included as Exhibit 1042. That transcript, however, starts at page 353 and does not include a page 289. Ex. 1042.

Patent Owner, meanwhile, persuasively argues that Kaun uses other means to hold its device together. Resp. 54–55. Dr. Peckerar testified in a prior deposition that, for Kaun’s device “the main burden is on their center, their center fastener.”¹² Ex. 1042, 419. Further, Kaun discloses a secondary spring loaded housing or adhesive to hold its cup and top together. Prelim. Resp. 58 (citing Ex. 1023, Fig. 9, 20–21, ¶¶ 98, 101–110). Given Petitioner’s relative lack of evidence that Kaun teaches or suggests “the housing cup and the housing top are held together by a force-fitting connection” as compared to Patent Owner’s evidence that Kaun uses other means of holding the housing cup and housing top together, Petitioner is not reasonably likely to succeed in demonstrating that Kaun teaches or suggests this limitation of the ’835 patent’s claims.

Petitioner’s arguments regarding Brenner are similarly flawed. Petitioner argues that: “Brenner discloses that a radial pressure can be exerted on the edge section of the housing cover on the inner wall of the housing cup by means of the cup bottom constriction, corresponding to a ‘force-fitting connection.’” Pet. 32. Petitioner does not cite any support for this sentence, although there is a citation to paragraph 30 of Brenner at the end of the paragraph in which the sentence appears. *Id.* We agree that Brenner teaches that creating an indentation on the base of the housing cup generates a radial pressure against the housing top. Ex. 1005 ¶ 30 (“By indenting the cup base, a radial pressure is generated on the edge portion of the housing cover that abuts against the inner wall of the housing cup.”). Petitioner stops short, however, of arguing or providing evidence that such a

¹² This testimony refers to a different but closely related Kaun reference, US 2005/0233212 A1, Oct. 20, 2005 (“Kaun 212”).

pressure results in a battery that is “held together by a force-fitting connection.” *See* Prelim. Resp. 58–59 (Patent Owner arguing same). Also, Brenner’s Figure 2 indicates a flanged (beaded over) casing that would serve to hold cup and top together. Ex. 1005, Fig. 2; Prelim. Resp. 47–48.

In short, Petitioner sufficiently directs us to evidence that the combined teachings of Kobayashi, Kaun, and Brenner teach or suggest radial pressure and sealing. Pet. 52–59 (citing, for example, Ex. 1023, Fig. 8, ¶¶ 61–62, 72, 98; Ex. 1005, Fig. 2, ¶ 30). But Petitioner lacks sufficient evidence that such radial pressure results in a battery that is “held together by a force-fitting connection” (with the exception of the testimony of Dr. Juzkow stating alleged testimony of Dr. Peckerar which is unpersuasive in view of counter-evidence Patent Owner presents). Pet. 28–33.

Thus, because Petitioner has not shown sufficiently that the combined teachings of Kobayashi, Kaun, and Brennar teach or suggest the “held together by a force-fitting connection” limitation of the challenged claims, Petitioner has not shown a reasonable likelihood that any of the challenged claims would have been obvious over the combination of Kobayashi, Kaun, and Brenner.

2. *Ground 2: Brown, Higuchi, Kaun, Brenner, and Arai*

This ground fails for essentially the same reason as ground 1. Petitioner argues that Brown teaches providing a gasket and leak-tight seal, but Petitioner does not argue or present evidence that Brown teaches or suggests “the housing cup and the housing top are held together by a force-fitting connection.” Pet. 65–66; *see also Id.* at 75–76 (explaining that it would have been obvious to combine references’ teachings to achieve

sealing). Moreover, Brown indicates that it is held together by beading over. Brown Figure; Prelim. Resp. 60–61.

Petitioner refers back to its Kaun arguments that we address above by stating that “Kaun discloses many aspects of this claim element, including the ‘overlapping,’ ‘force-fitting connection,’ and ‘without being beaded over’ limitations.” *Id.* at 65. Petitioner does not, however, further elaborate on how Kaun might teach or suggest “the housing cup and the housing top are held together by a force-fitting connection,” and Petitioner’s prior explanation of Kaun is insufficient for the reasons we explain above.

For this ground, Petitioner does not rely on Higuchi, Brenner, or Arai for the “held together” limitation. Pet. 64–66 (“Thus, Brown in combination with Kaun discloses the ‘force-fitting connection’ limitation.”).

Thus, because Petitioner has not shown sufficiently that the combined teachings of Brown, Higuchi, Kaun, Brenner, and Arai teach or suggest the “held together by a force-fitting connection” limitation of the challenged claims, Petitioner has not shown a reasonable likelihood that any of the challenged claims would have been obvious over the combination of Brown, Higuchi, Kau, Brenner, and Arai.

IV. CONCLUSION

Upon consideration of the Petition, the Preliminary Response, the Preliminary Reply, the Preliminary Sur-Reply, and the evidence presented, we determine that Petitioner has not shown a reasonable likelihood that it will prevail in showing that at least one of the challenged claims is unpatentable. Accordingly, we do not institute an *inter partes* review of any challenged claim based on any ground asserted in the Petition.

V. ORDER

For the foregoing reasons, it is

ORDERED that, pursuant to 35 U.S.C. § 314, the Petition is denied,
and no *inter partes* review is instituted.

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