



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
14/008,815 09/30/2013 Taewon Kim 040302-1042 9088

22428 7590 01/17/2019
Foley & Lardner LLP
3000 K STREET N.W.
SUITE 600
WASHINGTON, DC 20007-5109

Table with 1 column: EXAMINER

DIGNAN, MICHAEL L

Table with 2 columns: ART UNIT, PAPER NUMBER

1723

Table with 2 columns: NOTIFICATION DATE, DELIVERY MODE

01/17/2019

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipdocketing@foley.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte TAEWON KIM and KAZUMI HISAJIMA

Appeal 2018-008694
Application 14/008,815
Technology Center 1700

Before JAMES C. HOUSEL, N. WHITNEY WILSON, and
WESLEY B. DERRICK, *Administrative Patent Judges*.

HOUSEL, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellants² appeal under 35 U.S.C. § 134(a) from the Examiner’s decision rejecting claims 13–23. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

¹ Our decision refers to the Specification (“Spec.”) filed September 30, 2013, the Examiner’s Non-Final Office Action (“Non-Final”) dated December 6, 2017, Appellants’ Appeal Brief (“Appeal Br.”) filed May 7, 2018, the Examiner’s Answer (“Ans.”) dated July 5, 2018, and Appellants’ Reply Brief (“Reply Br.”) filed September 5, 2018.

² Appellants identify NISSAN MOTOR CO., LTD. as the real party in interest (Appeal Br. 1).

STATEMENT OF THE CASE

The invention relates to a battery, a battery manufacturing method, and a packaged electrode (Spec. 1, Title). Appellants disclose that because secondary batteries include battery elements formed by stacking positive electrodes, separators, and negative electrodes, it is important that the positive and negative electrodes are stacked on one another without positional displacement (*id.* ¶ 2). To prevent such positional displacement, Appellants disclose that it was known to use packaged positive electrodes by thermally welding edges of two separators together and then placing the positive electrode between the separators (*id.* ¶ 3). However, Appellants further disclose that, when the electrodes and the separators are the same size, placement of the negative electrode on the welded portions of the separators can lead to short circuits if minute holes are formed in the welded portions of the separators (*id.* ¶ 6). Therefore, Appellants provide a negative electrode that has an outer periphery that is larger than that of the positive electrode, but the thermally welded portions of the separators are outside this outer periphery (*id.* ¶¶ 8–10).

Claim 13, reproduced below from the Claims Appendix to the Appeal Brief, is illustrative of the subject matter on appeal.

13. A battery comprising:
 - a packaged electrode comprising:
 - a package formed of two sheet-shaped separators or a folded single sheet-shaped separator with at least part of end portions thermally melted and welded together, and
 - a first electrode placed in the package, the first electrode comprising a first electrode collector and a first electrode active material layer formed on the first electrode collector; and
 - a second electrode stacked in a stacking direction directly on the packaged electrode, the second electrode comprising a

second electrode collector and a second electrode active material layer formed on the second electrode collector, wherein, when seen in the stacking direction, an entire outer peripheral edge of the second electrode active material layer is positioned further out than an entire outer peripheral edge of the first electrode active material layer with respect to a center of the battery, and further in than an entire outer peripheral edge of the package and inner edges of welded portions of the end portions of the two sheet-shaped separators or the folded single sheet-shaped separator with respect to the center of the battery.

Independent claim 16 recites a method of manufacturing a battery as recited in claim 13. Independent claim 22 recites a packaged electrode as recited in claim 13.

REJECTIONS

The Examiner maintains, and Appellants request our review of, the following grounds of rejection under 35 U.S.C. § 103(a):

1. Claims 13–16, 19, and 21–23 as unpatentable over Shimamura³ in view of Maeda⁴ and Inoue,⁵ and as evidenced by Nagai;⁶
2. Claim 17 as unpatentable over Shimamura in view of Maeda and Inoue, as evidenced by Nagai,⁷ and further in view of Datta;⁸

³ Shimamura et al., US 2004/0106038 A1, published June 3, 2004 (“Shimamura”).

⁴ Maeda et al., JP 2008-91100 A, published April 17, 2008 (“Maeda”).

⁵ Inoue, JP 2007-299855, published April 28, 2006.

⁶ Nagai et al., US 2009/0197175 A1, published August 6, 2009 (“Nagai”).

⁷ Although the Examiner’s statement of rejection of claim 17 does not repeat reliance on Nagai as an evidentiary teaching as was done in the rejection of claim 16, we nonetheless include it here because claim 17 depends from claim 16. We have similarly corrected the statements of rejection for claims 18 and 20 for the same reason.

⁸ Datta, US 2010/0062335 A1, published March 11, 2010.

3. Claim 18 as unpatentable over Shimamura in view of Maeda and Inoue, as evidenced by Nagai, and further in view of Datta and Funahashi;⁹ and
4. Claim 20 as unpatentable over Shimamura in view of Maeda and Inoue, as evidenced by Nagai, and further in view of Funahashi.

ANALYSIS

We address claims separately from representative claim 13 only to the extent that they have been argued separately pursuant to 37 C.F.R. § 41.37(c)(1)(iv).

After review of the opposing positions articulated by Appellants and the Examiner, the applied prior art, Appellants' claims and Specification disclosures, and the Declaration under 37 C.F.R. § 1.132 of Taewon Kim ("Decl.") filed May 11, 2015, we determine that the Appellant's arguments are insufficient to identify reversible error in the Examiner's obviousness rejections. *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011). Accordingly, we affirm the stated obviousness rejections for substantially the reasons set forth by the Examiner in the Examiner's Answer and the Non-Final Office Action and based the fact findings set forth therein. We offer the following for emphasis only.

Claim 13

The Examiner finds Shimamura teaches a packaged electrode comprising a sandwich formed by first electrode 4 placed between two sheet-shaped separators 6 and a second electrode 5 stacked directly on the

⁹ Funahashi et al., US 2008/0299451 A1, published December 4, 2008 ("Funahashi").

sandwich, wherein an edge of separators 6 is outside an outer periphery of second electrode 5 which has a larger area than first electrode 6 (Ans. 3–4). The Examiner acknowledges that Shimamura only shows the respective edges of first electrode 4, second electrode 5, and separators 6 along one side (*see* Shimamura, Fig. 4A). However, the Examiner determines that extending the edges of these structures along each of the sides would have been obvious, especially since Nagai demonstrates such configurations were well known in the art (*id.* at 5).

The Examiner also acknowledges Shimamura fails to teach thermally welded edges of the separators such that the inner edges of welded portions are further out than the edges of the first and second electrodes (Ans. 4). However, the Examiner finds Maeda teaches stacked alternating electrodes in an electrochemical device using separators that are spot welded together along their edges (*id.* at 5). In addition, the Examiner finds Inoue teaches a stacked electrode structure for an electrochemical device having a packaged electrode comprising a first electrode placed between a pair of separators with thermally welded end portions and a second electrode stacked directly over the first electrode with an outer periphery spaced inwardly from the thermally welded end portions (*id.* at 6). The Examiner finds that Maeda and Inoue teach joining the end portions of the separators to form a bag-like envelope around one electrode helps to prevent short circuits (*id.* at 7, 8). The Examiner, therefore, concludes that it would have been obvious to thermally weld end portions of Shimamura's separators to form a bag-like separator from the two sheets or from a folded sheet in order to prevent short circuits between the electrodes from the electrodes sliding relative to each other (*id.*).

Appellants argue that Shimamura fails to disclose welding end portions of the separators together and, as such, fails to disclose the entire outer peripheral edge of the second electrode active material layer is further in than the inner edges of welded portions of the end portions of the separators (Appeal Br. 9). This argument is not persuasive because it is directed to Shimamura individually, rather than the prior art combination as set forth in the Examiner's rejection. "Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references [The reference] must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole." *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). *See also In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

Appellants next argue that it would not have been obvious to modify Shimamura as the Examiner suggests because such a modification deteriorates the compactness of Shimamura's electrochemical cell (Appeal Br. 10). Appellants contend that Shimamura desires providing an automobile cell that is compact and lightweight so as to be easily installed on electric and fuel cell vehicles (*id.*). Appellants further assert that the calculated area of the laminated films is 340 cm² and the unit cell surface area is 300 cm², leaving the difference of 40 cm² to be "occupied by the joint of the circumferentially peripheral portion of the laminate film joined by thermal welding" (*id.*). Thus, Appellants urge that "[n]o space will be left inside the cell for housing the 'welded portions of the separators' or for providing a gap between 'the inner edges of the welded portions of the separators' and the 'outer peripheral edges of the electrodes'" (*id.*).

This argument is not persuasive because the dimensions noted by Appellants refer to Shimamura's outer laminated films 3, not to separators 6 (*see* Shimamura ¶ 60) (“lamine widths (a length of one side of the outer sheath laminate films from which the terminal leads are taken out L6, L6’”). In addition, Appellants fail to direct our attention to any evidentiary teaching or technical reasoning that thermally welding the edges of separators 6 would substantially diminish the compactness of Shimamura's electrochemical cell. Indeed, thermally welding the edges or end portions of the separators would not appear to add any additional area to the overall size of Shimamura's cell because they already extend beyond both the outer peripheries of the first and second electrodes (*id.*, Figs. 3, 4A).

Appellants next contend that Shimamura explains that the dimensions of the examples shown in Tables 1–2 and the spaces shown in Figures 3–4 should be satisfied at the same time (Appeal Br. 11). Given this teaching, Appellants assert that one of ordinary skill in the art would have understood “that the wider the spaces at both ends shown in Figs. 3–4, the narrower the spaces at both ends in the width direction” (*id.*). Therefore, Appellants assert that Shimamura's disclosure does not support the Examiner's interpretation that the spaces at both ends in the width direction should be as wide as the spaces at both longitudinal ends (*id.*).¹⁰

¹⁰ In the Reply Brief, Appellants present a new argument not raised in the Appeal Brief that the ordinary artisan would not reasonably be expected to draw an inference that the positional relationships of Figures 3, 4A, and 4B of Shimamura hold true for the entire outer peripheral edge because Shimamura explicitly teaches the contrary (Reply Br. 4–6). Appellants also present for the first time in the Reply Brief the new argument that Shimamura does not teach “the S>N>P inequality” (*id.* at 4). Under regulations governing appeals to the Board, any new argument not timely

We disagree. Appellants fail to demonstrate why Shimamura's disclosure of dimensions in Tables 1–2 and depiction of the spaces in Figures 3–4 is incompatible with similar relative sizing of the electrodes and separators in the width direction as depicted in Figure 3 for the length direction. Appellants fail to direct our attention to either an evidentiary teaching or technical reasoning supporting the assertion that the ordinary artisan would have understood that wider spaces at both ends in the length direction necessarily meant narrower spaces at both ends in the width direction. Even if this were true, this does not mean that the relative sizes of the electrodes and separators in the width direction would vary from that shown for the length direction. Moreover, we note that the dimensions L6, L6' refer not to the widths of the electrodes, but to the widths of the outer sheath laminate films (Shimamura ¶ 60).

Appellants next argue that certain figures in Maeda fail to illustrate the positional relationship between positive electrode 1 and negative electrode 2 (Appeal Br. 11). Appellants urge that Maeda's negative electrode active materials 2a have the same size and shape as the separators

presented in the Appeal Brief will not be considered when filed in a Reply Brief, absent a showing of good cause explaining why the argument could not have been presented in the Appeal Brief. *See Ex parte Nakashima*, 93 USPQ2d 1834 (BPAI 2010) (informative) (explaining that arguments and evidence not timely presented in the principal Brief will not be considered when filed in a Reply Brief, absent a showing of good cause explaining why the argument could not have been presented in the Principal Brief); *Ex parte Borden*, 93 USPQ2d 1473, 1476-77 (BPAI 2010) (informative) (“Properly interpreted, the Rules do not require the Board to take up a belated argument that has not been addressed by the Examiner, absent a showing of good cause.”). *See also* 37 C.F.R. § 41.41(b)(2). On this record, Appellants have failed to provide such a showing for either new argument. Accordingly, we will not consider these arguments newly raised in the Reply Brief.

3 and thus overlap welded portions 4, and that Inoue's electrodes have the same size and shape (*id.* at 11, 14–15). In addition, Appellants assert that Inoue's thermally welded sides can be adjacent to the second electrode's outer periphery (*id.* at 14). As such, Appellants contend that Maeda and Inoue fail to teach that the entire outer periphery of the second electrode active material layer is further out than that of the first electrode active material layer and further in than the welded portions of the separators (*id.* at 12, 15).

These arguments are not persuasive because the rejection does not rely on Maeda or Inoue to teach the respective sizes of the electrodes and separators. *See In re Merck & Co.*, 800 F.2d at 1097. On the contrary, Shimamura already provides a second electrode having an area larger than a first electrode, but smaller than the separators. Shimamura Fig. 3.

Appellants argue that the motivation to combine Shimamura, Maeda, and Inoue is deficient (Appeal Br. 12, 15). In particular, Appellants contend that the teachings of Shimamura, Maeda, and Inoue are not reasonably pertinent to solving the problem of preventing negative electrode active material and positive electrode active material that diffuses through the minute holes formed in the welded portions of the separators from reacting to each other (*id.* at 13, 15). Also, Appellants contend that Shimamura, Maeda, and Inoue fail to recognize the problem necessitating modification (*id.* at 13–14, 15).

Appellants' argument that Shimamura, Maeda, and Inoue are not reasonably pertinent to the problem Appellants solved because neither reference recognizes this problem is not persuasive of reversible error in the Examiner's rejection. Our reviewing court has stated that

[t]wo separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.

In re Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (citations and internal quotes omitted). While these two criteria are helpful in many instances, we must not lose sight of the key question at hand: what is “prior art” as that term is used in 35 U.S.C. § 103(a)? References that are “too remote to be treated as ‘prior art’” are excluded from the obviousness analysis. *In re Sovish*, 769 F.2d 738, 741 (Fed. Cir. 1985). The non-analogous art test provides helpful insight on the underlying question of what is “prior art” within the meaning of the statute. However, we are not blind to the reality of the circumstances of the case before us. *In re Wood*, 599 F.2d 1032, 1036 (CCPA (1979)). Nor should we adhere to rigid and mandatory formulas that overly limit the inquiry. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007).

Focusing on the first of the two tests above, the test for analogous art “requires the PTO to determine the appropriate field of endeavor by reference to explanations of the invention's subject matter in the patent application, including the embodiments, function, and structure of the claimed invention.” *Bigio*, 381 F.3d at 1325. We thus consider all explanations of the inventors' subject matter while keeping in mind that prior art is analogous when it “is from the same field of endeavor, *regardless of the problem addressed. . . .*” *Id.* (emphasis added). Thus, “field of endeavor” should not be defined narrowly based only upon the specific problem addressed.

Moreover, when considering field of endeavor, we remain cognizant of the adage that “the name of the game is the claim.” *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998) (quoting Giles Sutherland Rich, *Extent of Protection and Interpretation of Claims—American Perspectives*, 21 Int’l Rev. Indus. Prop. & Copyright L. 497, 499 (1990)). The Supreme Court has articulated this same sentiment when emphasizing that the patentee’s motivation and purpose do not control an obviousness determination: In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103. *KSR Int’l Co.*, 550 U.S. 398.

In addition, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR Int’l Co.*, 550 U.S. at 420. “[T]he motivation in the prior art to combine the references does not have to be identical to that of the applicant to establish obviousness.” *In re Kemps*, 97 F.3d 1427, 1430 (Fed. Cir. 1996). “As long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor.” *In re Beattie*, 974 F.2d 1309, 1312 (Fed. Cir. 1992).

Here, the Examiner notes that the rejection relies on a different motivation for combining the teachings of Shimamura, Maeda, and Inoue, namely that forming a bag-like structure with the separators around one of the electrodes prevents the electrodes from contacting each other (Ans. 18).

Kemps, 97 F.3d at 1430. In addition, the Examiner's findings that Shimamura, Maeda, and Inoue each disclose packaged stacked electrodes for electrochemical devices (*id.* at 3, 5, 6) support the Examiner's position that these references are from the same field of invention or endeavor. *Bigio*, 381 F.3d at 1320. Further, the Examiner finds, without dispute, that Maeda and Inoue teaches welding end portions of adjacent separators to create a bag-like envelope prevents short circuits. Ans. 7, 8; *see also* Maeda ¶ 6 and Inoue ¶ 8. Therefore, although the motivation for combining Shimamura, Maeda, and Inoue in the Examiner's rejection is not the same as Appellants' motivation, we are not persuaded of reversible deficiency in the Examiner's stated rationale for combining the references. *KSR Int'l Co.*, 550 U.S. at 420; *Beattie*, 974 F.2d at 1312.

Appellants next contend that Nagai is not directed to a packaged electrode and Nagai's separators are not welded (Appeal Br. 16). As such, Appellants argue that Nagai fails to disclose a package formed of two sheet-shaped separators of a folded single sheet-shaped separator with at least part of end portions thermally welded together (*id.*). In addition, Appellants argue that because Nagai's separator is larger than the positive electrode, but smaller than the negative electrode, Nagai fails to teach that the entire outer periphery of the second electrode active material layer is further in than the entire outer peripheral edge of the package and inner edges of the welded portions (*id.*). Appellants also contend that the ordinary artisan would not have modified Nagai such that the negative electrode is smaller than the separator because Nagai expressly teaches against such a modification and doing so would render Nagai unsatisfactory for its intended purpose of restricting movement of lithium ions via the separator outer edge (*id.* at 17).

Appellants' arguments regarding Nagai are not persuasive of reversible error in the rejection. We note that this rejection does not propose any modification of Nagai device; rather, the rejection merely relies on Nagai for support of the Examiner's position that Shimamura's structure provides a four-sided structure that extends similarly in the width direction as in the length direction depicted in Figure 3 (Ans. 5, 20–21). Thus, Appellants' arguments fail to address Nagai's teachings as relied on in the rejection.

Accordingly, we sustain the Examiner's obviousness rejection of claims 13–16 and 21–23.

Claim 19

Appellants separately argue claim 19, which depends from independent claim 16 and further requires that the packaged electrode forms a package by joining at least part of the end portions of two sheet-shaped separators by thermal welding. Specifically, Appellants argue that Inoue teaches away from the use of thermal welding by teaching battery degradation due to wrinkles caused by thermal welding which increase inter-electrode distance (Appeal Br. 18). Therefore, Appellants contend that Inoue utilizes adhesives rather than thermal welding of the separators (*id.*; Decl. ¶ m).

The Examiner responds that Inoue is relied on in the rejection for its teaching that joining separators was well-known in the art and that thermal welding was a well-known technique for such joining to form a bag-like structure (Ans. 20). Though Inoue describes a problem regarding thermal welding of the separators, thermal welding was nonetheless a known technique for joining the end portions of adjacent separators together to form

a bag-like structure. As the Examiner recognizes, something that is known or obvious does not become patentable simply because it has been described as somewhat inferior to some other product for the same use. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). Moreover, “just because better alternatives exist in the prior art does not mean that an inferior combination is inapt for obviousness purposes.” *In re Mouttet*, 686 F.3d 1322, 1334 (Fed. Cir. 2012).

We, therefore, sustain the Examiner’s obviousness rejection of claim 19.

Claim 17

Appellants separately argue claim 17, which depends from claim 16 and further requires detecting a center line of the first electrode which is then aligned with center lines of the two sheet-shaped separators or folded single sheet-shaped separator. Specifically, Appellants argue that Datta fails to disclose how bipolar plates 600 are aligned with separators 715 because neither grid 100 nor spacer 200 comprise separator 715 (Appeal Br. 19).

This argument is not persuasive of reversible error. The Examiner finds that Datta’s alignment method is applicable to any number of objects to be aligned, including aligning electrodes and separators so as to form the packaged electrode of Shimamura as modified by Maeda and Inoue (Appeal Br. 21). As such, the Examiner determines that the alignment of Shimamura’s electrodes and separators based on alignment of their center lines in view of the known technique disclosed in Datta would have been obvious to one of ordinary skill in the art (*id.*). We agree. Datta teaches a technique for aligning a grid and spacer such that their center lines coincide (Datta ¶ 50). Appellants do not direct our attention to any evidence that

performing such alignment of the center lines of Shimamura's electrodes and separators was beyond the ordinary skill in the art as a technique for ensuring that each structure in the stacked device is properly aligned over each other. *See KSR Int'l Co.*, 550 U.S. at 401 (“[I]f 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 that person's skill.”).

We, therefore, sustain the Examiner's obviousness rejection of claim 19.

Claim 18

Appellants separately argue claim 18, which depends from claim 17 and further requires that the packaged electrode is formed by joining at least part of overlapped end portions of a folded single sheet-shaped separator by thermal welding. Specifically, Appellants argue that the ordinary artisan would not have modified the device of Shimomura as modified by Maeda, Inoue, and Nagai in view of Funahashi because Inoue teaches away from the use of thermal welding (Appeal Br. 21). This argument is substantially the same as set forth above for claim 19. For the same reasons given above, this argument is not persuasive of reversible error.

We, therefore, sustain the Examiner's obviousness rejection of claim 18.

Claim 20

Appellants separately argue claim 20, which depends from claim 16 and further requires that the packaged electrode is formed by joining at least part of overlapped end portions of a folded single sheet-shaped separator by

thermal welding. Specifically, Appellants urge that Funahashi discloses a separator that is the same size as the negative electrode, but larger than the positive electrode (Appeal Br. 21–22). As such, Appellants argue that Funahashi fails to disclose the relative size relationships recited in claim 16 (*id.* at 22). Appellants further argue that one of ordinary skill in the art would not have modified Funahashi to include a configuration in which the separator is larger than the negative electrode (*id.*). In addition, Appellants argue that the ordinary skilled artisan would not have modified the combined device of Shimamura, Maeda, Inoue, and Nagai in view of Funahashi because Inoue teaches away from thermal welding (*id.* at 22–23).

This latter argument is substantially the same as set forth above for claims 18 and 19, and for the same reasons given above, is not persuasive of reversible error. The remaining arguments are also not persuasive of reversible error because the rejection does not rely on Funahashi to teach the respective sizes of the electrodes and separators. *See In re Merck & Co.*, 800 F.2d at 1097. Instead, as the Examiner finds, Shimamura already provides a second electrode having an area larger than a first electrode, but smaller than for the separators. Shimamura Fig. 3. Moreover, the rejection does not propose any modification of Funahashi’s device; rather, the rejection merely relies on Funahashi for teaching a folded single separator whose overlapped end portions are joined together by thermal welding (Ans. 13, 21–22; *see also* Appeal Br. 22). Thus, Appellants’ arguments fail to address Funahashi as relied on in the rejection.

We, therefore, sustain the Examiner’s obviousness rejection of claim 20.

Declaration under 37 C.F.R. § 1.132 of Taewon Kim

We have fully considered this Declaration to the extent to which it applies to the rejections maintained by the Examiner in this appeal. We note that paragraphs h–m and p of the Declaration discuss Inoue and Funahashi. However, these discussions are limited to the asserted failure of these two references to disclose the relative size relationships between the electrodes and separators as recited in the claims. As we set forth above, the Examiner’s rejection does not rely on Inoue or Funahashi to teach the respective sizes of the electrodes and separators. Instead, as the Examiner finds, Shimamura already provides a second electrode having an area larger than a first electrode, but smaller than the separators. Shimamura Fig. 3. Accordingly, the Declaration fails to identify or support reversible error in the Examiner’s rejections.

DECISION

Upon consideration of the record, and for the reasons given above and in the Examiner’s Answer, the decision of the Examiner rejecting claims 13–23 is *affirmed*.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED