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MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			MCDERMOTT, HELEN M	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NOBUYUKI NAGANAWA, TOMONORI KISHIMOTO,
MASAMITSU TONONISHI, SHINSUKE YOSHITAKE, and
YASUNORI OKUNO

Appeal 2019-006295
Application 13/536,780
Technology Center 1700

Before CATHERINE Q TIMM, CHRISTOPHER C. KENNEDY, and
JANE E. INGLESE, *Administrative Patent Judges*.

INGLESE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ requests review under 35 U.S.C. § 134(a) of the Examiner’s rejection of claims 1, 3, 11, 12, 21, 22, and 24–26.² We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM IN PART.

¹ We use the word “Appellant” to refer to the “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies GS Yuasa International Ltd. and Honda Motor Co., Ltd. as the real parties in interest. Appeal Brief filed February 19, 2019 (“Appeal Br.”) at 1.

² Non-Final Office Action entered September 17, 2018 (“Office Act.”) at 1. Although the Office Action lists claim 23 as rejected, Appellant cancelled claim 23 in an amendment filed April 5, 2018, and the Examiner confirmed entry of the amendment in an Advisory Action entered May 1, 2018.

CLAIMED SUBJECT MATTER

Appellant claims an electric storage device. Appeal Br. 2–5. Claim 1, the sole pending independent claim, illustrates the subject matter on appeal, and reads as follows:

1. An electric storage device, comprising:
 - an electrode assembly including a positive electrode plate and a negative electrode plate that are insulated from each other;
 - a pair of current collectors, each of which includes a connecting portion and is connected to a corresponding one of the positive electrode plate and the negative electrode plate at the connecting portion;
 - a case that houses the electrode assembly and the pair of current collectors, the electrode assembly being supported by the pair of current collectors in the case;
 - a cover plate which covers a top surface of the case, the cover plate extending above an upper surface of the electrode assembly; and
 - a distance retaining member that retains a distance between portions more distal than respective connecting portions of the pair of current collectors,
 - wherein each connecting portion includes an outer face that faces an inner surface of the case and an inner face that faces the electrode assembly,
 - wherein *the distance retaining member comprises a spacer* that connects the pair of current collectors in the case while supporting inner faces of the current collectors,
 - wherein *the spacer includes:*
 - a first coupler including a first support face that faces the inner surface of the case and abuts the inner face of the current collector of one of the pair of current collectors,*
 - and a second support face that faces the electrode assembly and abuts an outer face of the current collector of said one of the pair of current collectors;
 - a second coupler including a third support face that faces the inner surface of the case and abuts the inner face of the current collector of another of the pair of current collectors,

and a fourth support face that faces the electrode assembly and abuts an outer face of the current collector of the other one of the pair of current collectors; and

a bridge portion connecting the first coupler with the second coupler, a bottom surface of the bridge portion extending below a bottom surface of the electrode assembly, wherein the first support face protrudes from the distance retaining member in a perpendicular direction to a longitudinal direction of an extension of the electrode assembly, wherein the spacer is electrically insulating, and wherein the first support face continuously extends from the bottom surface of the bridge portion.

Appeal Br. 13–14 (Claims Appendix) (emphasis added).

REJECTIONS

The Examiner maintains the following rejections in the Examiner’s Answer entered July 2, 2019 (“Ans.”):

I. Claim 24 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention; and

II. Claims 1, 3, 11, 12, 21, 22, and 24–26 under 35 U.S.C. § 103(a) as unpatentable over Kim I (US 2011/0081573 A1) in view of Kim II (US 2011/0250491 A1) and Tanaka (JP 2010-231945).

FACTUAL FINDINGS AND ANALYSIS

Upon consideration of the evidence relied upon in this appeal and each of Appellant’s contentions, we reverse the Examiner’s rejection of claims 1, 3, 11, 12, 21, 22, and 24–26 under 35 U.S.C. § 103(a), for the reasons set forth in the Appeal and Reply Briefs, and below. We summarily affirm the Examiner’s rejection of claim 24 under 35 U.S.C. § 112, second paragraph because Appellant does not contest this rejection.

Rejection I

We summarily sustain the Examiner's rejection of claim 24 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention because Appellant does not contest this rejection. Appeal Br. 6–11; 37 C.F.R. § 41.37(c)(1)(iv); *see also* Manual of Patent Examining Procedure (MPEP) § 1205.02 (9th ed. Jan. 2018) (“If a ground of rejection stated by the examiner is not addressed in the appellant’s brief, appellant has waived any challenge to that ground of rejection and the Board may summarily sustain it, unless the examiner subsequently withdrew the rejection in the examiner’s answer.”).

Rejection II

We now address the Examiner's rejection of claims 1, 3, 11, 12, 21, 22, and 24–26 under 35 U.S.C. § 103(a) as unpatentable over Kim I in view of Kim II and Tanaka.

Claim 1 requires the recited electric storage device to comprise, in part, a distance retaining member comprising a spacer that includes first and second couplers and a bridge portion. Claim 1 requires the first coupler to include a first support face that faces the inner surface of a case, abuts the inner face of a current collector, protrudes from the distance retaining member (spacer) in a perpendicular direction to a longitudinal direction of an extension of an electrode assembly, and continuously extends from the bottom surface of the bridge portion of the spacer.

Kim I discloses rechargeable battery 110 comprising electrode assembly 10 including positive electrode 11 and negative 12 electrode, and

buffer sheet 40 (distance retaining member, spacer), mounted in case 15. Kim I ¶¶ 27, 28, 36; Fig. 2. Kim I discloses that rechargeable battery 110 further comprises cap assembly 20, which includes cap plate 28 (cover plate) that seals case 15. Kim I ¶¶ 27, 32; Fig. 2. Kim I discloses that that cap assembly 20 also includes positive terminal 21, which is electrically connected to positive electrode 11 via first lead tab 31 (first current collector), and negative terminal 22, which is electrically connected to negative electrode 12 via second lead tab 32 (second current collector). Kim I ¶¶ 32, 35; Fig. 2.

Kim I discloses that buffer sheet 40 (distance retaining member, spacer) includes first and second side support plates 43 (first and second couplers) and bottom support plate 41 (bridge portion). Kim I ¶ 38; Fig. 3. Kim I discloses that first and second side support plates 43 (first and second couplers) of buffer sheet 40 (distance retaining member, spacer) directly contact first 31 and second 32 lead tabs (first and second current collectors), respectively, to “support electrode assembly 10 in a stable manner,” preventing electrode assembly 10 from being shaken “even under application of an external impact or vibration.” Kim I ¶¶ 36, 49, 50; Fig. 2.

The Examiner finds that Kim I does not disclose that first and second side support plates 43 (first and second couplers) include support faces that face the inner surface of case 15, abut the inner faces of first 31 and second 32 lead tabs (first and second current collectors), respectively, and protrude from buffer sheet 40 in a direction perpendicular to a longitudinal direction of an extension of electrode assembly 10. Office Act. 6. The Examiner relies on Kim II for suggesting modification of Kim I’s first and second side support plates 43 (first and second couplers) to include such support faces.

Office Act. 6–8.

Kim II discloses rechargeable battery 200 comprising electrode assembly 10 including lead tab 53, retainer 63, and case 20. Kim II ¶¶ 63, 64, 65; Fig. 6. Kim II discloses that lead tab 53 includes current collector portion 532. Kim II ¶ 65; Fig. 6. Kim II discloses that retainer 63 includes buffer 633, a pair of first hooks 631, and second hook 632 (coupler). Kim II ¶ 65; Fig. 6.

Kim II discloses stably installing retainer 63 at three points on current collector portion 532 of lead tab 53 by hooking first hooks 631 onto the sides of current collector portion 532, and hooking second hook 632 (coupler) into installing hole 533 on current collector portion 532. *Id.* Figures 6 and 7 of Kim II show that second hook 632 (coupler) includes a support face (first support face) that faces an inner surface of case 20, abuts an inner face of current collector portion 532, and protrudes in a direction perpendicular to a longitudinal direction of an extension of electrode assembly 10. Kim II discloses that retainer 63 fixes the position of electrode assembly 10 in case 20, preventing electrode assembly 10 from moving in case 20, and providing electrode assembly 10 with resistance to vibration. Kim II ¶ 66.

In view of these disclosures in Kim II, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to modify first and second side support plates 43 (first and second couplers) of Kim I's rechargeable battery 110 to each include first 631 and second 632 hooks as disclosed in Kim II having support faces that face an inner surface of Kim I's case 15 and abut the inner faces of Kim I's first 31 and second 32 lead tabs (first and second current collectors), so as to more stably attach side

support plates 43 (first and second couplers) to first 31 and second 32 lead tabs (first and second current collectors). Office Act. 7.

The Examiner finds that Kim I and Kim II do not disclose extending the first support face of Kim II's second hook 632 continuously from bottom support plate 41 (bridge portion) of Kim I's buffer sheet 40 (distance retaining member, spacer). *Id.* The Examiner determines, however, that it would have been obvious to rearrange the position of Kim II's first 631 and second 632 hooks, taking into consideration the size and shape of Kim I's first 31 and second 32 lead tabs (first and second current collectors), to any location where the first support faces of hooks 631, 632 could effectively attach to Kim I's first 31 and second 32 lead tabs (first and second current collectors), so as to stably attach hooks 631, 632 onto first 31 and second 32 lead tabs 31 (first and second current collectors). Office Act. 7 (citing MPEP § 2144.04 VI. C; *In re Japikse*, 181 F.2d 1019 (CCPA 1950); *In re Kuhle*, 526 F.2d 553 (CCPA 1975)).

The Examiner also relies on Tanaka's disclosure of rechargeable battery 20 including cathode contact button 6 (first current collector) fixed to the end of cathode support component 10 (distance regaining member, spacer), and anode contact button 7 (second current collector) fixed to the end of anode support component 11 (distance regaining member, spacer), inside case 3. Office Act. 7-8; Tanaka ¶ 10; Fig. 1. Tanaka discloses that cathode support component 10 and anode support component 11 (spacers) touch the bottom of case 3, and Tanaka explains that this structural arrangement prevents cathode 6 and anode 7 contact buttons (first and second current collectors) from shaking when battery 20 is subject to vibration, which prevents damage to the power generating elements of

battery 20. Tanaka ¶¶ 7, 35; Fig. 1.

In view of these disclosures in Tanaka, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to modify the length of Kim I's first 31 and second 32 lead tabs (first and second current collectors) to extend substantially to support plate 41 (bridge portion) of Kim I's buffer sheet 40 (distance retaining member, spacer) as taught by Tanaka, and to position the first support face of Kim II's second hook 632 (coupler) so that it extends continuously from a bottom surface of Kim I's support plate 41 (bridge portion), to more stably or effectively attach first support faces of Kim II's second hook 632 (coupler) to Kim I's first 31 and second 32 lead tabs (first and second current collectors), thereby improving the vibration resistance of Kim I's electrode assembly 10. Office Act. 8.

Appellant argues that the Examiner picks and chooses different elements and functions from the devices disclosed in Kim II and Tanaka, and proposes modifying Kim I's device with those elements and functions so that Kim I's device "appear[s] to have a structure similar to the claimed invention." Appeal Br. 9. Appellant argues that the Examiner, therefore, "is improperly using the claimed invention as a roadmap and [] one of ordinary skill in the art would not have combined the references as alleged by the Examiner." *Id.*

Appellant's arguments identify reversible error in the Examiner's rejection. As discussed above, Kim II discloses installing retainer 63 at three points on current collector portion 532 of lead tab 53 of Kim II's rechargeable battery 200 by hooking first hooks 631 onto the sides of current collector portion 532, and hooking second hook 632 (coupler) into installing hole 533 on current collector portion 532. In this configuration, second

hook 632 (coupler) includes a support face (first support face) that faces an inner surface of case 20, abuts an inner face of current collector portion 532, and protrudes in a direction perpendicular to a longitudinal direction of an extension of electrode assembly 10.

On the record before us, however, the Examiner does not identify any disclosure in Kim I, Kim II, or Tanaka that would have suggested modifying Kim I's rechargeable battery 110 to incorporate retainer 63 as disclosed in Kim II so that the first support face of second hook 632 (coupler) extends continuously from bottom support plate 41 of Kim I's buffer sheet 40 (distance retaining member, spacer). The Examiner does not persuasively explain why one of ordinary skill in the art would have disposed second hook 632 (coupler) in this manner to extend continuously from Kim I's buffer sheet 40 (distance retaining member, spacer), rather than hooking second hook 632 (coupler) into an installing hole on Kim I's lead tab 31 (first current collector) as disclosed in Kim II.

Although the Examiner determines, citing MPEP § 2144.04 VI. C, that it would have been obvious to rearrange the position of Kim II's first 631 and second 632 hooks to any location where they could stably attach onto Kim I's first 31 and second 32 lead tabs (first and second current collectors), the section of the MPEP cited by the Examiner in support of this determination goes on to state that "[t]he mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." MPEP § 2144.04 VI. C

(citing *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ351, 353 (BPAI 1984)). The Examiner's conclusory assertion that it would have been obvious to rearrange the position of Kim II's second 632 hook to any location where it could stably attach onto Kim I's first 31 and second 32 lead tabs (first and second current collectors) does not identify any reason that would have led one of ordinary skill in the art to rearrange the position of Kim II's second 632 hook so that the first support face of second hook 632 (coupler) extends continuously from bottom support plate 41 of Kim I's buffer sheet 40 (distance retaining member, spacer) as required by claim 1.

The Examiner also does not provide a persuasive, reasoned explanation for why Tanaka's disclosure of fixing cathode contact button 6 (first current collector) to the end of cathode support component 10 (distance retaining member, spacer), and fixing anode contact button 7 (second current collector) to the end of anode support component 11 (distance retaining member, spacer), would have led one of ordinary skill in the art to position the first support face of Kim II's second hook 632 (coupler) so that it extends continuously from a bottom surface of Kim I's support plate 41 (bridge portion).

Although the Examiner asserts that the relied-upon disclosures in Tanaka would have suggested extending Kim I's first 31 and second 32 lead tabs (first and second current collectors) to bottom support plate 41 of Kim I's buffer sheet 40, which "would provide a reason to rearrange the hook as taught by Kim [II] (which includes the first support face) to continuously extend from the bridge portion" (Ans. 14), this conclusory assertion does not persuasively explain why or how Tanaka's disclosure of extending current collectors to the end of support elements would have suggested modifying

Kim I's rechargeable battery 110 to incorporate retainer 63 as disclosed in Kim II so that the first support face of second hook 632 (coupler) extends continuously from bottom support plate 41 of Kim I's buffer sheet 40 (distance retaining member, spacer) as required by claim 1. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–19 (2007) (explaining that “because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known,” “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.”); *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”).

Consequently, on the record before us, Examiner does not provide sufficient evidence and reasoning to establish that one of ordinary skill in the art would have been led to modify Kim I's rechargeable battery 110 in the manner proposed so as to arrive at an electric storage device having the features recited in claim 1.

We, accordingly, do not sustain the Examiner's rejection of claims 1, 3, 11, 12, 21, 22, and 24–26 under 35 U.S.C. § 103(a) as unpatentable over Kim I in view of Kim II and Tanaka.

CONCLUSION

Claims	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
24	112, second paragraph	Indefiniteness	24	
1, 3, 11, 12, 21, 22, 24–26	103(a)	Kim I, Kim II, Tanaka		1, 3, 11, 12, 21, 22, 24–26
Overall Outcome			24	1, 3, 11, 12, 21, 22, , 25, 26

AFFIRMED IN PART