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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ASIF IQBAL, DANIEL MILLER, and
JAMES LAWRENCE SWOISH

Appeal 2019-005151
Application 14/336,418
Technology Center 1700

Before KAREN M. HASTINGS, JAMES C. HOUSEL, and
MERRELL C. CASHION, JR., *Administrative Patent Judges*.

HOUSEL, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 9–15, 20, 23, 25, and 28–37. We have jurisdiction under 35 U.S.C. § 6(b).

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Ford Global Technologies, LLC, which is ultimately owned by Ford Motor Company. Appeal Brief (“Appeal Br.”) filed February 14, 2019, 1.

We AFFIRM IN PART.²

CLAIMED SUBJECT MATTER

The claims are directed to a vented battery pack device having a conduit to communicate fluid vented from a battery cell along a non-linear vent path. Appeal Br., Claims App’x, 18–20. Appellant discloses that, from time to time, gas within the interior of the cells of a battery, such as lithium ion batteries, can undesirably expand, necessitating venting of the cells. Spec. ¶ 2. The vented gas is then directed outside of the vehicle. *Id.* The invention provides a non-linear vent path for the vented gas. *Id.* ¶ 3. Appellant further discloses that the vent path may be provided by a conduit that is integrated within an end plate of the battery pack to reduce complexity, part requirements, and assembly steps. *Id.* ¶ 61.

Claim 9, reproduced below from the Claims Appendix to the Appeal Brief, is illustrative of the claimed subject matter. The limitation at issue is italicized.

9. A battery pack device, comprising:

a conduit *compressing against* a battery cell array, the conduit to communicate fluid that is vented from an interior of a battery cell within the battery cell array along a non-linear vent path, the conduit including an inlet that opens to a vent chamber of the battery cell array.

Independent claims 28 and 35 similarly recite battery pack devices comprising a conduit “compressing directly against” the battery cell array

² This Decision also cites to the Specification (“Spec.”) filed July 21, 2014, the Examiner’s Answer (“Ans.”) dated May 23, 2019, and the Reply Brief (“Reply Br.”) filed June 24, 2019.

(claim 28) or “compressed against” an array of battery cells (claim 35), wherein the conduit provides a non-linear vent path.

REFERENCES

The Examiner relies on the following prior art:

| Name | Reference | Date |
|--------------------------|--------------------|---------------|
| Sheridan | US 3,633,586 | Jan. 11, 1972 |
| Kimoto et al. (“Kimoto”) | US 6,278,259 B1 | Aug. 21, 2001 |
| Murata | US 2010/0009244 A1 | Jan. 14, 2010 |

REJECTIONS

The Examiner maintains, and Appellant requests our review of, the following rejections under 35 U.S.C. § 103:

1. Claims 9–11, 20, 23, 28, 29, 32, 33, 35, and 36 as unpatentable over Kimoto;
2. Claims 12, 13, 15, 25, 34, and 37 as unpatentable over Kimoto in view of Murata;
3. Claim 14 as unpatentable over Kimoto in view of Murata, and further in view of Sheridan;
4. Claim 30 as unpatentable over Kimoto in view of Sheridan; and
5. Claim 31 as unpatentable over Kimoto in view of Sheridan, and further in view of Murata.

OPINION

We review the appealed rejections for error based upon the issues Appellant identifies, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) (cited with approval in *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011))

(“[I]t has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections.”). After considering the argued claims and each of Appellant’s arguments, we are not persuaded of reversible error in the appealed rejections, except as otherwise indicated below. We offer the following for emphasis only.

For purposes of this appeal, to the extent that the claims on appeal are separately argued, we will address them separately consistent with 37 C.F.R. § 41.37(c)(1)(vii).

Rejection 1: Obviousness over Kimoto

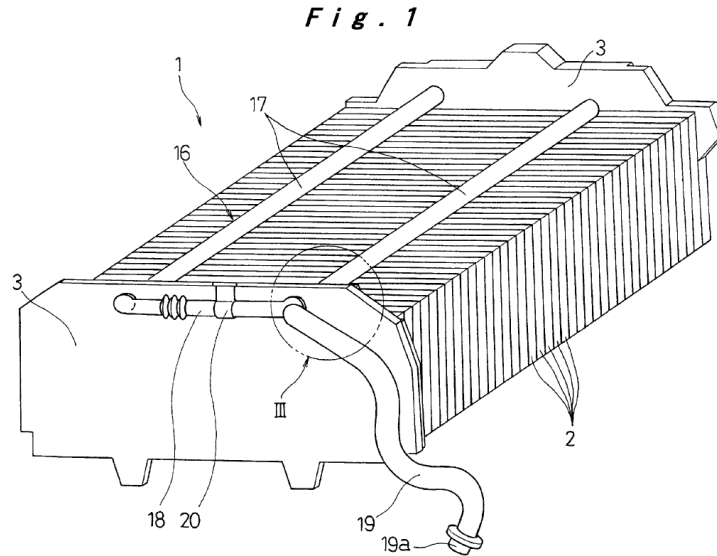
The Examiner rejects claims 9–11, 20, 23, 28, 29, 32, 33, 35, and 36 under 35 U.S.C. § 103 as unpatentable over Kimoto. A complete statement of this rejection is set forth in the Examiner’s Answer. Ans. 3–9.

Claims 9, 23, and 35

Appellant does not argue claims 9, 23, and 35 separately, but instead relies solely on arguments raised against the rejection of claim 9. Appeal Br. 9, 11. Therefore, claims 23 and 35 stand or fall with claim 9.

The Examiner finds that Kimoto teaches a battery module comprising a conduit (external discharge tube) 18 supported on end plate 3 by supporting clip 20, wherein end plate 3 compresses against battery cells 2 such that conduit 18 is pressing against the battery array, i.e., indirectly compresses against the array. Ans. 3–4. The Examiner further finds Kimoto teaches that gas vented from battery cells 2 is discharge along discharge gas tubes 17 to conduit 18 providing a non-linear vent path. *Id.* at 3. The Examiner finds that claim 9 fails to define or recite any degree of compressing, and that “compressing against” does not require physical

contact between the conduit and the battery cell array. *Id.* at 19. Kimoto, Figure 3, illustrates a battery pack device and is reproduced below:



Kimoto, Fig. 3, is an oblique view of the battery pack device

Appellant argues that Kimoto fails to teach conduit 18 “compressing against a battery cell array” as required by claim 9. Appeal Br. 3–8.

Appellant asserts that Application Figure 2 shows battery cell arrays 30 are axially compressed between endplates 38. *Id.* at 3. Appellant further asserts that Application Figures 5 and 6 show that endplates can include the claimed conduit. *Id.* at 4. Appellant contends that Kimoto’s conduit 18 is coupled to end plates 3 via supporting clip 20 and thus is “separate and distinct” from end plates 3. *Id.* (emphasis omitted). Therefore, Appellant argues that a skilled person would not interpret Kimoto’s conduit 18 as indirectly compressing against the battery cell array. *Id.* at 5.

Appellant’s arguments are not persuasive of reversible error in the Examiner’s rejection of claim 9. Initially, we note that Appellant urges that nowhere has Appellant asserted that “compressing against” requires physical contact between the conduit and the battery cell array. Appeal Br. 7.

Appellant, nonetheless, contends that Kimoto is not teaching the conduit 18 being compressed against the battery cell array. *Id.* As such, Appellant contends that the Examiner’s interpretation of “compressing against” is incorrect, yet fails to offer any alternative interpretation or direct our attention to any definition in the Specification.

It is well established that “the PTO must give claims their broadest reasonable construction consistent with the specification. . . . Therefore, we look to the specification to see if it provides a definition for claim terms, but otherwise apply a broad interpretation.” *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007). “[A]s applicants may amend claims to narrow their scope, a broad construction during prosecution creates no unfairness to the applicant or patentee.” *Id.*

The Specification discloses five instances describing either a wall (end plate 38) or a conduit compressing or compressing against battery cell array 30: 1) “the wall compresses a battery cell array” (Spec. ¶ 8); 2) “a conduit compressing against a battery cell array” (*id.* ¶ 11); 3) “compressing the battery cell array with the plate” (*id.* ¶ 20); 4) “each end plate 38 compresses axially against the ends of two different arrays 30” (*id.* ¶ 41); and 5) “[t]he conduit compresses cells of the battery pack” (*id.* ¶ 61). None of these disclosures provides a definition for “compresses against” as used in claim 9. Nonetheless, we note that the Specification and drawings describe the end plates axially compressing the battery cell array and that the conduit may be within the end plates. Further, although Appellant asserts that Figures 5 and 6 show that endplates can include the claimed conduit, this feature is not recited in claim 9. Indeed, this feature is instead recited in, for example, claim 10. Where a feature is recited in a dependent claim, we will

not read that feature into the independent claim. Therefore, consistent with Appellant's disclosure, we note that the conduit can either be carried by or integrated within the end plates.

We further note that the plain and ordinary meaning of the term "compress" is "to press or squeeze together"³ or "to press together; force into less space."⁴ Neither of these definitions require actual physical contact between the actor and the object. Accordingly, we interpret "compresses against," as used in claim 9, to mean that the conduit can either be carried by or integrated within the end plates.

Applying this definition to the issue before us, we determine that Kimoto's teaching of a conduit carried by the end plates, wherein the end plates axially compress the battery cell array meets the limitation of "a conduit compressing against a battery cell array." Accordingly, Appellant has not identified reversible error in the Examiner's obviousness rejection of claim 9 over Kimoto.

Claim 10

Claim 10 depends from claim 9, and further requires that the conduit is a first plate at an axial end of the array, and the array is axially compressed between the first plate and a second plate.

The Examiner acknowledges that Kimoto fails to teach that conduit 18 is a plate, yet determines that it would have been obvious to integrate conduit 18 into end plate 3 "since it has been held to be within the general

³ <https://www.merriam-webster.com/dictionary/compress>, last visited on June 25, 2020.

⁴ <https://www.dictionary.com/browse/compress>, last visited on June 25, 2020.

skill of a worker in the art to make plural parts unitary as a matter of engineering design choice.” Ans. 4 (citing *In re Larson*, 340 F.2d 965, 968 (CCPA 1965) and *In re Lockhart*, 190 F.2d 208, 210 (CCPA 1951)).

Appellant argues that the Examiner’s rationale for modifying Kimoto overlooks that conduit 18, via clip 20, is intended to be moveable relative to end plate 3. Appeal Br. 8. Appellant contends that such a modification would render Kimoto’s structure unsatisfactory for its intended purpose. *Id.* at 9.

Appellant’s argument is persuasive of reversible error in the Examiner’s determination that it would have been obvious to integrate Kimoto’s conduit 18 into end plate 3. The Examiner fails to respond to this argument, as to claim 10. *See* Ans. 19, ¶ A. Initially, we interpret the limitation “the conduit is a first plate” to mean that the conduit is integrated within the first plate. This interpretation is consistent with the Specification which, as explained above, teaches the conduit may be integrated within the plate. *See, e.g.*, Spec. ¶ 61.

We note that, consistent with Appellant’s argument, there is no suggestion or motivation to make a proposed modification if doing so would render the prior art invention being modified unsatisfactory for its intended purpose. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326 (Fed. Cir. 2009) (“[T]he ‘predictable result’ discussed in [*KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007)] refers not only to the expectation that prior art elements are capable of being physically combined, but also that the combination would have worked for its intended purpose.”); *see also In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984). Here, Kimoto attaches conduit 18 to end plate 3 via clip 20 so as to provide for relative

movement therebetween. As Appellant contends, making Kimoto's conduit 18 integral with end plate 3 would prevent this relative movement rendering Kimoto's structure unsatisfactory for its intended purpose.

We further note *Larson* concerned a claim to a fluid transporting vehicle that was rejected as obvious over a prior art reference, wherein the claim differed from the reference in reciting a brake drum integral with a clamping means, whereas the reference's brake disc and clamp comprised several parts rigidly secured together as a single unit. The *Larson* court affirmed the rejection holding, among other reasons, "that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice." *Larson*, 340 F.2d at 968. In contrast, Kimoto's parts are not rigidly secured together, but intentionally assembled to permit relative movement between conduit 18 and end plate 3.

In addition, *Lockhart* concerned a claim to a hypodermic syringe that was rejected as obvious over a combination of prior art references, wherein the claim differed from the reference by, among other things, making integral several parts taught to be separately screw-attachable in the references. The *Lockhart* court, while acknowledging that under some circumstances making integral that which was separate before may be patentable, affirmed the rejection because such integration involved no more than mere mechanical skill. *Lockhart*, 190 F.2d at 210. Again, in contrast to *Lockhart*, Kimoto's parts are not merely secured together, but are instead assembled to permit relative movement between conduit 18 and end plate 3.

In contrast, we note *Carl Schenck, A.G. v. Nortron Corp.*, 713 F.2d 782 (Fed. Cir. 1983) arrived at a result consistent with Appellant's argument and opposite to *Larson* and *Lockhart*. *Schenck* involved claims directed to a

vibratory testing machine comprising a holding structure, a base structure, and a supporting means which together formed “a single integral and gaplessly continuous piece.” *Schenck*, 713 F.2d at 784–86. Although Nortron argued that the invention merely makes integral that which had been made in four bolted pieces, the *Schenck* court disagreed because there was a perceived need for mechanisms to dampen resonance, whereas the inventor eliminated the need for dampening via the one-piece gapless support structure. *Id.* Like *Schenck*, Kimoto teaches a need for a connection between conduit 18 and end plate 3 permitting relative movement therebetween, whereas claim 10 eliminates such a flexible connection.

Accordingly, Appellant has identified reversible error in the Examiner’s obviousness rejection of claim 10 over Kimoto.

Claims 11 and 32

Claim 11 depends from claim 9, and further requires a foot extending from the conduit. Claim 32 depends from claim 9, and further requires a vent chamber and battery cell array, wherein the battery cells include vent openings that selectively communicate fluid from the cells to the chamber. Appellant does not argue these claims separately, but instead relies solely on arguments raised against the rejection of claim 11. Appeal Br. 10. Therefore, claim 32 stands or falls with claim 11.

The Examiner finds that Kimoto teaches a foot extending from conduit 18 because a “foot” means any portion of an object at its bottom and Kimoto teaches a drain hose 19 extending from conduit 18. Ans. 5.

Appellant argues that the Examiner’s interpretation of “foot” is unreasonable and inconsistent with the Specification. Appeal Br. 9. However, this argument is not persuasive of reversible error because

Appellant fails to explain with any particularity why the Examiner's finding that Kimoto's drain hose 19 is not a foot extending from conduit 18.

Appellant neither offers an alternative interpretation nor directs our attention to a definition in the Specification.

Accordingly, Appellant has not identified reversible error in the Examiner's obviousness rejection of claims 11 and 32 over Kimoto.

Claim 20

Claim 20 depends from 9, and further requires that the conduit is a plate providing an axially outermost portion of the battery cell array.

The Examiner finds that Kimoto teaches that conduit 18 is supported on end plate 3 by supporting clip 20, wherein end plate 3 provides an axially outermost portion of the battery cell array. Ans. 5. Similarly to claim 10, the Examiner further determines that it would have been obvious to have integrated conduit 18 with end plate 3. *Id.* at 20 (citing *Larson* and *Schenck supra*).

Appellant argues that a skilled person would not incorporate conduit 18 into end plate 3 because conduit 18 requires flexibility to accommodate relative movement between the conduit and end plate 3. Appeal Br. 9. Appellant also relies on the same arguments raised against the rejection of claim 10. *Id.*

For the same reasons given above with regard to claim 10, we likewise agree with Appellant that the Examiner reversibly erred in determining that it would have been obvious to integrate conduit 18 into end plate 3.

Claim 28

Independent claim 28 is reproduced below from the Claims Appendix to the Appeal Brief. The limitation at issue is italicized.

28. A battery pack device, comprising:
a conduit *compressing directly against* a battery cell array and adapted to communicate gas that is vented from the battery cell array along a vent path that extends non-linearly between an inlet opening and an outlet opening.

The issue presented with regard to claim 28, whether Appellant has identified reversible error in the Examiner's determination that Kimoto teaches conduit 18 directly compresses against the battery array, is similar to the issue presented with regard to claim 9 above. As with claim 9, we note that because dependent claim 29 recites that the conduit is a plate, i.e., the conduit is integrated into the end plate, which is disclosed to be the structure which compresses the battery array, we will not read this limitation into claim 28. As such, claim 28 does not require that the conduit is integrated into the plate. Given this interpretation, we interpret "compresses against" to include any structure carried by the end plate.

However, unlike claim 9, we must interpret "directly" within the context "compresses directly against." Again, we note that although Appellant criticizes the Examiner's interpretation of this limitation, Appellant neither offers an alternative interpretation nor directs our attention to any definition in the Specification, nor do we find any. Indeed, the Specification does not even use the term "directly," and as explained above, claim 28 does not require that the conduit is integrated into the plate.

We note the term “directly” may mean either “[w]ithout changing direction or stopping” or “[w]ith nothing or no one in between.”⁵ Thus, the second definition requires actual physical contact between the conduit and the battery array and is consistent with the conduit being integrated into the plate. However, the first definition merely requires that the conduit be carried by the end plate which compresses the battery array without changing direction. This second definition is consistent with Kimoto. It follows, therefore, that Appellant fails to identify reversible error in the Examiner’s obviousness rejection of claim 28 over Kimoto.

Claim 29

Claim 29 depends from claim 28, and further requires that the conduit is a plate and that the vent path includes first and second sections that are transverse to each other.

Similarly to claim 10 above, the Examiner acknowledges that Kimoto fails to teach that conduit 18 is a plate, yet determines that it would have been obvious to integrate conduit 18 into end plate 3 “since it has been held to be within the general skill of a worker in the art to make plural parts unitary as a matter of engineering design choice.” Ans. 4 (citing *Larson*, 340 F.2d at 968 and *Lockhart*, 190 F.2d at 210).

Appellant relies on the same arguments raised against claim 10, which we found persuasive of reversible error. Thus, for the same reasons as set forth above for claim 10, Appellant has identified reversible error in the Examiner’s obviousness rejection of claim 29 over Kimoto.

⁵ <https://www.lexico.com/en/definition/directly>, last visited June 26, 2020.

Claims 33 and 36

Claim 33 depends from claim 32, and claim 36 depends from claim 35. Each of claims 33 and 36 further requires a membrane covering the vent opening and configured to open in response to fluid expansion within the battery cell.

The Examiner finds that Kimoto's valve cover 13 reads on a membrane because cover 13 functions the same as the recited membrane. Ans. 7, 9. Appellant argues that this finding is erroneous because Kimoto's valve cover 13 is not a membrane and does not have the same functionality and structural location as a membrane. Appeal Br. 11. Appellant submits a definition of a membrane as meaning "a 'thin soft pliable sheet or layer especially of animal or plant origin' or a 'piece of parchment forming part of a roll.'" *Id.*

The Examiner does not dispute Appellant's proffered definition of "membrane," nor does the Examiner find that Kimoto's valve cover 13 is encompassed by this definition. Instead, the Examiner's finding is based on the functional similarities between Kimoto's valve cover 13 and the claimed membrane. However, merely because two structures function similarly or the same does not mean that those two structures are necessarily the same. Accordingly, Appellant has identified reversible error in the Examiner's obviousness rejection of claims 33 and 36 over Kimoto.

Rejection 2: Obviousness over Kimoto and Murata

Claims 12, 13, 15, 25, 34, and 37 as unpatentable over Kimoto in view of Murata. A complete statement of this rejection is set forth in the Examiner's Answer. Ans. 9–15.

Claims 12 and 13

Claim 12 depends from claim 11, and further requires that the foot provides a first perimeter portion of a second vent path and interfaces with a cold plate providing a second perimeter portion of the second vent path, and the cold plate disposed adjacent the battery cell array in order to take on thermal energy directly from the array.

The Examiner acknowledges that Kimoto fails to teach the limitations of claim 12, but finds that Murata teaches a battery module for a vehicle comprising a foot (gas discharging pipe) 15 for discharging gas from the battery module to the outside of the vehicle. Ans. 9–10. The Examiner further finds that Murata’s separation labyrinth chamber 17 is formed by a first perimeter portion of a second vent path (an upper portion of foot 15) and a cold plate providing a second perimeter portion of the second vent path (coolant storage portion 172). *Id.* at 10. The Examiner concludes that it would have been obvious to modify Kimoto with a separation labyrinth chamber formed by Kimoto’s foot 19 and a cold plate “to ensure the prevention of the electrolytic solution from being discharged outside the vehicle.” *Id.*

Appellant argues that the Examiner’s rationale for the modification of Kimoto in view of Murata is erroneous because the Examiner has not shown that Kimoto discloses electrolytic solution ever being conveyed through the drain hose. Appeal Br. 12. Appellant also argues that Murata fails to teach that foot 15 provides a first perimeter portion of a second vent path and the coolant storage portion 172 provides a second perimeter portion of the second vent path, contrary to the Examiner’s finding otherwise. *Id.* at 13.

Instead, Appellant asserts that the perimeter of any vent path in Murata is formed entirely by foot 15 or entirely by coolant storage portion 172. *Id.*

Appellant's arguments are persuasive of reversible error in both the Examiner's findings regarding Murata and the rationale for modifying Kimoto in view of Murata. We note that the Examiner fails to respond to Appellant's arguments discussed above. *See* Ans. 21–22 (responding only to Appellant's additional argument that Murata's coolant storage portion 172 is not a cold plate as recited in claim 12). Murata discloses that the problem associated with electrolyte solution escaping from the battery module occurs because the module is bathed in coolant 23 and, when an abnormality occurs, electrolytic solution can be discharged along with coolant 23. Murata ¶ 78. As Appellant argues, the Examiner does not direct attention to any disclosure in Kimoto of either a coolant or electrolytic solution being discharged into conduit 18 or foot 19, nor do we find any. Moreover, the Examiner does not direct attention to any disclosure in Murata of a vent path formed by a first perimeter portion provided by the foot and a second perimeter portion provided by the coolant storage portion.

Accordingly, Appellant has identified reversible error in the Examiner's obviousness rejection of claim 12 over Kimoto and Murata. We, therefore, do not sustain the rejection of claim 12. We likewise do not sustain the rejection of claim 13 which depends from claim 12.

Claim 15

Claim 15 depends from claim 9, and further requires that the foot extends from the conduit opposite the array, and the foot interfaces with a cold plate disposed adjacent the battery cell array in order to take on thermal energy directly from the array.

The Examiner acknowledges that Kimoto in view of Murata fails to teach a cold plate disposed directly adjacent the battery cell array such that the cold plate can take on thermal energy from the battery cell array, but concludes that it would have been obvious to locate the cold plate adjacent the array “since it has been held that rearranging parts of an invention involves only routine skill in the art.” Ans. 12. The Examiner also finds that locating Murata’s cold plate (coolant storage portion 172) adjacent the array would provide the same function as recited in claim 15. *Id.*

Appellant argues Murata’s foot 15 does not interface with any cold plate and coolant storage portion 172 is not a cold plate. Appeal Br. 14. Appellant asserts that Murata’s coolant storage portion 172 simply stores coolant. *Id.*

Appellant’s arguments are not persuasive of reversible error. The Examiner interprets Murata’s coolant storage portion 172 as a cold plate because it provides at least a surface for absorbing heat, i.e., thermal energy, from gas discharged from the battery, which means that portion 172 takes on thermal energy from the battery. Ans. 21. In addition, the Examiner notes that “adjacent” does not require any physical contact between the cold plate and the array. *Id.* Appellant fails to respond to, or otherwise address either of these interpretations. Nor does Appellant respond to the Examiner’s conclusion that it would have been obvious to relocate Murata’s portion 172 adjacent to the array. Accordingly, Appellant has not identified reversible error in the Examiner’s obviousness rejection of claim 15 over Kimoto in view of Murata.

Claim 25

Claim 25 depends from claim 9, and further requires a plate comprising a wall and a foot extending from a vertical bottom portion of the wall, wherein the wall compresses the array and the foot interfaces with a cold plate.

The Examiner acknowledges that Kimoto fails to teach a foot interfacing with a cold plate, but finds that Murata teaches a coolant storage portion 172 interfacing with foot (gas discharging pipe) 15. Ans. 12–13. The Examiner concludes that it would have been obvious to have modified Kimoto such that foot 19 interfaces with a cold plate (coolant storage portion) as taught in Murata in order to trap electrolytic solution to prevent its discharge from the vehicle. *Id.* at 13.

Appellant argues that the Examiner's rationale for the modification of Kimoto in view of Murata is erroneous because the Examiner has not shown that Kimoto discloses electrolytic solution ever being conveyed through the drain hose. Appeal Br. 12.

Appellant's argument is persuasive of reversible error in the Examiner's rationale for modifying Kimoto in view of Murata. We note that the Examiner fails to respond to Appellant's argument. *See* Ans. 21–22 (responding only to Appellant's additional argument that Murata's coolant storage portion 172 is not a cold plate as recited in claim 12). Murata discloses that the problem associated with electrolytic solution escaping from the battery module occurs because the module is bathed in coolant 23 and, when an abnormality occurs, electrolytic solution can be discharged along with coolant 23. Murata ¶ 78. As Appellant argues, the Examiner does not direct attention to any disclosure in Kimoto of either a coolant or

electrolytic solution being discharged into conduit 18 or foot 19, nor do we find any.

Accordingly, Appellant has identified reversible error in the Examiner's obviousness rejection of claim 25 over Kimoto and Murata.

Claims 34 and 37

Claim 34 depends from claim 28, and claim 37 depends from claim 35. Each of claims 34 and 37 further requires the outlet opening opens to a fluid communication path exhausting gas to an exterior of a vehicle.

The Examiner finds that Murata teaches that gas from the battery is exhausted to an exterior of a vehicle having the battery. Ans. 14, 15. The Examiner concludes that it would have been obvious to exhaust gas from Kimoto's battery to an exterior of a vehicle having the battery as taught by Murata. *Id.*

Appellant challenges the rejection of claims 34 and 37 on the basis of the Examiner's reasoning that doing so "would relieve the internal pressure of the battery module." Appeal Br. 15. Appellant urges that exhausting gas anywhere would relieve the internal pressure of the battery and, as such, questions why a skilled person would exhaust gas to the exterior of the vehicle. *Id.*

This argument is not persuasive of reversible error. Appellant fails to address the Examiner's finding that Murata teaches exhausting gas from the battery to the exterior of the vehicle. This finding alone provides reason to relieve the internal pressure of the battery to the exterior of the vehicle. Moreover, we note that Appellant discloses that venting gas from a battery to the exterior of a vehicle is known. Spec. ¶ 2. Since Kimoto teaches that the battery may be mounted in an electric vehicle, exhausting gas from the

battery to the exterior of the vehicle is both suggested by Murata (and taught to be known by Appellant) and the most logical destination for these gases. Accordingly, Appellant has not identified reversible error in the Examiner's rejection of claims 34 and 37 over Kimoto in view of Murata.

Rejection 3: Obviousness over Kimoto, Murata, and Sheridan

Claim 14

Claim 14 depends from claims 12 and 13, the rejection of which, based on a combination of Kimoto and Murata, Appellant identified reversible error. The Examiner rejects claim 14 under 35 U.S.C. § 103 as unpatentable over Kimoto in view of Murata, and further in view of Sheridan. However, the Examiner does not rely on Sheridan to remedy the deficiencies in the combination of Kimoto and Murata discussed above. Accordingly, we likewise do not sustain the Examiner's rejection of claim 14 over Kimoto in view of Murata and Sheridan.

Rejections 4 and 5: Obviousness over Kimoto, Sheridan, and Murata

Claim 30

Claim 30 depends from claim 29, the rejection of which, based on Kimoto alone, Appellant identified reversible error. The Examiner rejects claim 30 under 35 U.S.C. § 103 as unpatentable over Kimoto in view of Sheridan. However, the Examiner does not rely on Sheridan to remedy the deficiencies in the rejection based on Kimoto discussed above. Accordingly, we likewise do not sustain the Examiner's rejection of claim 30 over Kimoto in view of Sheridan.

Claim 31

Claim 31 depends from claims 29 and 30, the rejection of which, based on Kimoto alone or in combination with Sheridan, Appellant identified reversible error. The Examiner rejects claim 31 under 35 U.S.C. § 103 as unpatentable over Kimoto in view of Sheridan, and further in view of Murata. However, the Examiner does not rely on Murata to remedy the deficiencies in the rejections based on Kimoto alone or combined with Sheridan discussed above. Accordingly, we likewise do not sustain the Examiner's rejection of claim 31 over Kimoto in view of Sheridan and Murata.

CONCLUSION

Upon consideration of the record and for the reasons set forth above and in the Examiner's Answer, the Examiner's decision to reject claims 9, 11, 15, 23, 28, 32, 34, 35, and 37 under 35 U.S.C. § 103 is *affirmed*.

However, for the reasons set forth above and in the Appeal and Reply Briefs, the Examiner's decision to reject claims 10, 12–14, 20, 25, 29–31, 33, and 36 under 35 U.S.C. § 103 is *reversed*.

DECISION SUMMARY

In summary:

| Claims Rejected | 35 U.S.C. § | Reference(s)/Basis | Affirmed | Reversed |
|--------------------------------------|--------------------|---------------------------|-----------------------|--------------------|
| 9–11, 20, 23, 28, 29, 32, 33, 35, 36 | 103 | Kimoto | 9, 11, 23, 28, 32, 35 | 10, 20, 29, 33, 36 |
| 12, 13, 15, 25, 34, 37 | 103 | Kimoto, Murata | 15, 34, 37 | 12, 13, 25 |

| | | | | |
|----------------------------|-----|-----------------------------|---|---|
| 14 | 103 | Kimoto, Murata, Sheridan | | 14 |
| 30 | 103 | Kimoto, Sheridan | | 30 |
| 31 | 103 | Kimoto, Sheridan, Murata | | 31 |
| Overall Outcome | | | 9, 11, 15, 23, 28, 32, 34, 35, 37 | 10, 12–14, 20, 25, 29– 31, 33, 36 |

TIME PERIOD FOR RESPONSE

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

AFFIRMED IN PART