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14/258,221	04/22/2014	BHASKARA BODDAKAYALA	83390914	5040
28866	7590	11/23/2018	EXAMINER	
MACMILLAN, SOBANSKI & TODD, LLC - FORD ONE MARITIME PLAZA - FIFTH FLOOR 720 WATER STREET TOLEDO, OH 43604			LYLES-IRVING, CARMEN V	
			ART UNIT	PAPER NUMBER
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* BHASKARA BODDAKAYALA, BRUCE C. BLAKEMORE,  
SHIGUANG ZHOU, and RAYMOND C. SICIAK

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Appeal 2018–000662  
Application 14/258,221  
Technology Center 1700

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Before KAREN M. HASTINGS, MONTE T. SQUIRE,  
and LILAN REN, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant<sup>1</sup> seeks our review under 35 U.S.C. § 134(a) of the Examiner’s final decision rejecting claims 1, 7, 8, and 14 under 35 U.S.C. § 102(b) as anticipated by Kurosawa (US 2011/0020676 A1, published Jan. 27, 2011); and dependent claims 2–6, 9–13, and 15–19 under 35 U.S.C.

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<sup>1</sup> Appellant is the Applicant, Ford Global Technologies LLC, which is also stated to be the real party in interest (Appeal Br. 1).

§ 103(a) as unpatentable over Kurosawa combined with various other references<sup>2</sup>. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

Independent claims 1, 8, and 14 are illustrative (emphasis added to highlight key disputed limitations):

1. A vehicle battery thermal system comprising:
  - a battery having cells arranged along an axis and having end faces parallel to the axis;
  - a sealed piping circuit including:
    - a first heat exchanger *in contact with*, and spanning, the end faces;
    - a second heat exchanger, spaced from the battery, in fluid communication with the first heat exchanger for heat transfer between the heat exchangers.
7. The system of claim 1 wherein the cells have first and second sides perpendicular to the end faces *and the first side of a first cell contacts the second side of a second cell*.
8. A vehicle battery thermal system comprising:
  - a battery including cells having first and second faces perpendicular to cell end faces, *the first face of a first cell contacting a second face of a second cell*;
  - a sealed piping circuit including:
    - a first heat exchanger spanning one end face of each cell;

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<sup>2</sup> See Final Action 5–23 for the Examiner’s complete statement of all the § 103 rejections (*see also* Ans. 7–25). Appellant does not separately argue any of these § 103 rejections (*see* Appeal Br. 12–14).

a second heat exchanger, spaced from the battery, in fluid communication with the first heat exchanger for heat transfer between the heat exchangers.

14. A method of thermally managing a vehicle battery comprising:

circulating a fluid through a first heat exchanger spanning one end face of each cell of the battery, each cell having first and second faces perpendicular to the end faces and *the first side face of a first cell contacting the second face of an adjacent cell;*

exchanging heat between the first heat exchanger and the cells;

circulating the fluid through a circuit to transfer heat between the first and a second heat exchanger.

Appellant only presents arguments directed to independent claims 1, 8, and 14, and dependent claim 7, which contains the same limitation in dispute in independent claims 8 and 14 (Appeal Br. 7–12; Reply Br. 3–6). Accordingly, all of the remaining claims stand or fall together with their respective independent claims.

#### ANALYSIS

We have reviewed each of Appellant's arguments for patentability. However, we determine that a preponderance of the evidence supports the Examiner's finding that the claimed subject matter of representative claims 1, 8, and 14, as well as dependent claim 7, is anticipated within the meaning of § 102 in view of the applied prior art of Kurosawa. Accordingly, we will

sustain all of the Examiner's rejections for essentially those reasons expressed in the Answer, including the Examiner's Response to Argument section, and we add the following primarily for emphasis.

"[T]he 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 only limitation in dispute in claim 1 is whether the claim language "heat exchanger in contact with, and spanning the end faces" of the battery cells encompasses the heat exchanger/battery cell configuration described in Kurosawa. There is no dispute that Kurosawa shows a heat exchanger next to and spanning end faces of the battery cells; rather, Appellant disputes the Examiner's finding that the heat exchanger is "in contact with" the end faces of the cells (*e.g.*, Appeal Br. 7, 8; *see also* Reply Br. 3, 4).

The Examiner explains that "in contact with" reasonably encompasses thermal contact as well as physical contact (Ans. 27). In addition, the Examiner points out that element 80 that is described as horizontal air leading path forming plate in Kurosawa may be viewed as a heat exchanger, and is a part of the heat exchanger 30 (Ans. 28). Appellant argues that contact means direct physical contact (Appeal Br. 7) and the plate 80 cannot be viewed as part of the heat exchanger (Reply Br. 4). This argument is not persuasive of reversible error. As pointed out by the Examiner, Appellant's

Specification contains no limiting or special definition of “contact.”

Appellant’s Specification only depicts the heat exchanger 120 schematically with a box (Fig. 1). No details of the claimed “contact” are provided. In addition, Kurosawa explicitly teaches that the battery packs are mounted on the heat exchanger 130 (Kurosawa ¶ 89). Furthermore, Kurosawa teaches that cooling and warming plate/heat exchanger 522 (Figs. 13, 15; Kurosawa ¶ 145) is located directly adjacent to the ends of the battery cells.

Accordingly, Appellant does not provide any persuasive reasoning or evidence that the Examiner’s finding of anticipation is unreasonable.

Thus, a preponderance of the evidence supports the Examiner’s position with respect to claim 1 (Ans. *generally*).

Likewise, with respect to claims 7, 8, and 14, Appellant’s arguments that Kurosawa does not depict that its battery cells 20 are encompassed by the claim language “the first face of a first cell contacting a second face of a second cell” because Kurosawa teaches either insulating sheets (Fig. 7) or spacing (Fig. 12) between the cells are unpersuasive. We agree with the Examiner that since the Specification is devoid of any details of the cell structure, an insulation sheet may reasonably be considered a part of the cell structure. More importantly, Kurosawa does indeed explicitly teach that the cells may be “brought into close contact with one another with no gap” (Kurosawa ¶ 110, *see also* ¶¶ 111, 113).

Accordingly, we affirm the Examiner’s anticipation rejection, as well as the obviousness rejections of the dependent claims, which are not separately argued.

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

Appeal 2018-000662  
Application 14/258,221

DECISION  
AFFIRMED