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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/364,712	01/12/2015	Rachid Zaffou	57906US01;67007-024PUS1	8169
26096	7590	06/02/2020	EXAMINER	
CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			SMITH, JEREMIAH R	
			ART UNIT	PAPER NUMBER
			1723	
			NOTIFICATION DATE	DELIVERY MODE
			06/02/2020	ELECTRONIC

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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* RACHID ZAFFOU, ARUN PANDY, and MICHAEL L. PERRY

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Appeal 2019-004540  
Application 14/364,712  
Technology Center 1700

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Before ROMULO H. DELMENDO, BEVERLY A. FRANKLIN, and  
JULIA HEANEY, *Administrative Patent Judges*.

FRANKLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1–3, 6, 8, 11–14, 16, and 20–25. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as United Technologies Corporation. Appeal Br. 1.

### CLAIMED SUBJECT MATTER

Claim 1 is illustrative of Appellant's subject matter on appeal and is set forth below:

1. A flow battery comprising:
  - a liquid electrolyte including an electrochemically active specie in a storage tank.
  - a bipolar plate including channels for receiving flow of the liquid electrolyte;
  - and
  - a porous electrode immediately adjacent the bipolar plate, the porous electrode being catalytically active with regard to the liquid electrolyte, and
  - wherein the channels of the bipolar plate have a channel shape that is configured to positively force at least a portion of the flow of the liquid electrolyte into the porous electrode, and wherein the channels have a shape that defines a cross-section, wherein each of the channels has a width extending between side walls and a depth extending between a bottom wall and an open top, and wherein the channel shape includes a plurality of protrusions that extend from the bottom wall toward the open top.

### REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Peng	US 2007/0178359 A1	Aug. 2, 2007
Horne	US 2011/0223450 A1	Sept. 15, 2011
Makita	US 2011/0223496 A1	Sept. 15, 2011
Brandon	US 2013/0330644 A1	Dec. 12, 2013
Makita '150	WO 2009/017150 A1	Feb. 5, 2009
Nozaki	JP S54-19228	July 13, 1979

## REJECTIONS

1. Claims 1, 2, 8, 11, 14, and 22–25 are rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Horne and Makita (WO 2009/017150; citations taken from US 2011/0223496).

2. Claims 3 and 13 are rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Horne, Makita, and Brandon.

3. Claims 6, 12, and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Horne, Makita (WO 2009/017150; citations taken from US 2011/0223496), and Nozaki (JP S54-19228; citations taken from applicant-supplied human translation).

4. Claims 20–21 are rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Horne, Makita (WO 2009/017150; citations taken from US 2011/0223496), and Peng.

## OPINION

Appellant does not make separate arguments in support of patentability of any particular claim or claim grouping. Accordingly, the claims subject to each ground of rejection will stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(iv). Our determination with regard to Rejection 1 is dispositive for Rejections 2–4.

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. Accordingly, we sustain each of the Examiner's rejections on appeal essentially for the reasons set forth in the Final Office Action and in the Answer, and affirm, and add the following primarily for emphasis.

We refer to pages 3–9 of the Answer regarding the Examiner's stated position for Rejection 1.

Beginning on page 5 of the Appeal Brief, Appellant presents arguments to support the position that Horne and Makita are non-analogous art, and that therefore the rejection is improper. Appellant submits that Makita and Horne are not analogous art at least because fuel cells and flow batteries are not analogous art. Appellant refers to *Sumimoto Electric Industries, Ltd. v. United Technologies Corp.*, IPR2017-00966, Paper 29 at 24-26 (PTAB Sept. 12, 2018) in this regard. Appeal Br. 5. Appellant further argues that one of ordinary skill in the art at the time of invention would not have sought to combine Makita with Horne because fuel cells have very different design considerations compared to flow batteries, e.g. gaseous vs. liquid transport considerations. Appellant emphasizes that the Horne flow battery is only configured for liquid electrolytes, whereas Makita's fuel cell must be configured to manage both liquids and gases. Appeal Br. 6. Appellant further points out various differences between flow batteries and fuel cells and argues that because of these differences, the combination described by the Examiner would not have been considered with a reasonable expectation of success. Appeal Br. 7.

We agree with the Examiner’s stated response made on pages 12–15, which we adopt as our own. We add that, as stated by the Court in *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1236, “[t]he Supreme Court’s decision in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 127 S.Ct. 1727, 167 L.Ed.2d 705 (2007), directs us to construe the scope of analogous art broadly, stating that ‘*familiar items may have obvious uses beyond their primary purposes*, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle.’ *Id.* at 402, 127 S.Ct. 1727 [emphasis original].”

With specific regard to Appellant’s reference to the case of *Sumimoto Electric Industries, Ltd. v. United Technologies Corp.*, IPR2017-00966, Paper 29 at 24-26 (PTAB Sept. 12, 2018), in support of the argument that Horne and Makita are not analogous art (Appeal Br. 5, Reply Br. 2–3), we adopt the Examiner’s response made on pages 15–17 of the Answer, and are unpersuaded by Appellant’s argument in this regard for the reasons stated by the Examiner therein.

Appellant argues that the fuel cell of Makita and the flow battery of Horne have different design considerations, structural requirements, for the reasons set forth on pages 7–9 of the Appeal Brief, and therefore would not have been combined. We are unpersuaded by this line of argument for the reasons provided by the Examiner on pages 17–18 of the Answer. Therein, the Examiner correctly states that Appellant does not provide evidence or reasoning tending to show that if the channeled structure disclosed by Makita were used as guidance to provide channels in the Horne conductive plate, then no success in distributing of liquid would be expected, and that

no additional evidence tied to the effectiveness of channels as disclosed by Makita in combination with the disclosure of Horne is presented in support of this line of argument.

Appellant lastly argues that in Makita, the ribs, not the channels, provide the benefit to flow uniformity. Appeal Br. 8–9. Reply Br. 3. We are unpersuaded by this line of argument for the reasons provided by the Examiner on page 18 of the Answer. Therein, the Examiner states that this argument does not specify or imply any structural difference between the prior art combined embodiment described in the art rejections and the claimed invention, and that it is unclear how the ribs of Makita (¶ [0163]) could produce a uniform flow without the channels which contain the ribs, also contributing to the uniformity of the flow, the channels being an integral part of the structure. Ans. 18. We agree.

### CONCLUSION

We affirm the Examiner’s decision.

### DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 2, 8, 11, 14, and 22–25	103	Horne and Makita	1, 2, 8, 11, 14, and 22–25	
3 and 13	103	Horne, Makita and Brandon	3 and 13	
6, 12 and 16	103	Horne, Makita and Nozaki	6, 12 and 16	
20–21	103	Horne, Makita and Peng	20–21	

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<b>Overall Outcome</b>			1--3, 6, 8, 11--14, 16, and 20--25	
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**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**