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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/329,707	12/08/2008	Duane M. Grider	81175960	9412

28395 7590 11/08/2018

BROOKS KUSHMAN P.C./FGTL
1000 TOWN CENTER
22ND FLOOR
SOUTHFIELD, MI 48075-1238

EXAMINER
PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
3761	

NOTIFICATION DATE	DELIVERY MODE
11/08/2018	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):

docketing@brookskushman.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DUANE M. GRIDER and BALA S. CHANDER

Appeal 2018-000557
Application 12/329,707
Technology Center 3700

Before JOSEPH A. FISCHETTI, NINA L. MEDLOCK, and CYNTHIA L. MURPHY, *Administrative Patent Judges*.

MURPHY, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellants[1] appeal under 35 U.S.C. § 134 from the Examiner's rejections of claims 1, 4–7, 9, and 11–20. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

We REVERSE.

---

[1] "The real party in interest is Ford Global Technologies, LLC." (Appeal Br. 1.)

STATEMENT OF THE CASE

The Appellants' invention relates to a system and method for controlling heating of "a battery in a hybrid vehicle using a source of power external to the hybrid vehicle." (Spec., 1, ll. 16–19.)

Illustrative Claim

> 1. A system for controlling heating of a battery in a hybrid vehicle using a power source external to the vehicle, the system comprising:
>
> a battery heater, located in the vehicle and electrically coupled to an electrical port; and
>
> a system controller in the vehicle configured to generate a heater control signal based on battery-life information and to distribute electric power from the power source to the battery heater.

References

Muramatsu	US 4,678,998	July 7, 1987
Reed	US 5,012,070	Apr. 30, 1991
Ozawa	US 5,757,595	May 26, 1998
Ng	US 6,320,351 B1	Nov. 20, 2001
Zhu	US 2006/0016793 A1	Jan. 26, 2006

Rejections

I. The Examiner rejects claims 1, 6, 7, 9, 11, and 12 under 35 U.S.C. § 103(a) as unpatentable over Reed, Muramatsu, and Ng. (Final Action 2.)

II. The Examiner rejects claims 4, 5, and 13–18 under 35 U.S.C. § 103(a) as unpatentable over Reed, Muramatsu, Ng, and Ozawa. (Final Action 3.)

III. The Examiner rejects claims 19 and 20 under 35 U.S.C. § 103(a) as unpatentable over Reed, Muramatsu, Ng, Ozawa, and Zhu. (Final Action 4.)

ANALYSIS

Claims 1, 17, and 19 are the independent claims on appeal, with the rest of the claims on appeal (i.e., claims 4–7, 9, 11–16, and 20) depending therefrom. (*See* Appeal Br., Claims App.)

Independent claims 1 and 17 recite a system for, and independent claim 19 recites a method of, "controlling heating of a battery in a hybrid electric vehicle using a power source external to the vehicle." (Appeal Br., Claims App.) The Examiner concludes that the claimed systems and method would have been obvious over the prior art. (*See* Final Action 2–5.) The Appellants argue that the Examiner's reasoning "does not support a conclusion of obviousness" (Appeal Br. 7); and, as discussed below, we are persuaded by the Appellants' position.

The Examiner's obviousness rejections all rely upon Reed to show a system/method for controlling heating of a vehicle battery using a power source external to the vehicle. (*See* Final Action 2–4.) Reed discloses "a vehicle preheating system" that is "capable of using standard household electrical current" to heat, among other things, "a warming device for the battery." (Reed, col. 3, ll. 53–55; col. 6, ll. 65–66.)[2] In Reed's vehicle preheating system, a "timer control 12" is "programmed to activate" preheating functions (e.g., the battery warmer), at the appropriate time. (*Id.* at col. 7, ll. 13–15.)

Independent claim 1 requires the system to include a "controller" that is "configured to generate a heater control signal based on *battery-life information* and to distribute electric power from the power source to the

[2] Quotations from Reed will omit the bolding of drawing-associated numerals.

battery heater." (Appeal Br., Claims App., emphasis added.) Independent claim 17 likewise recites a "controller" that is "configured to receive a command signal and a feedback signal including *battery-life information*." (*Id.*, emphasis added.) Independent claim 19 requires the step of "receiving a command signal and a feedback signal that includes *battery-life information*." (*Id.*, emphasis added.)

The Examiner acknowledges that, although Reed's system may include a timer control 12 which generates a heater control signal, this controller does not "generate a heater control signal based on *battery-life information*." (Final Action 2, emphasis added.) But the Examiner determines that it would have been obvious, "[i]n view of Muramatsu and Ng," to adapt Reed's controller so that it "monitors the conditions of the battery including a feedback signal regarding the battery conditions including its battery life." (*Id.* at 3.) The Examiner's articulated reason for this adaption is that it would "prevent overdrawing of the power from the battery source and prolong the service life of the battery." (*Id.*)

The Appellants argue that the Examiner's reasoning "lacks the rational underpinnings to support an obviousness rejection." (Appeal Br. 7.) Specifically, according to the Appellants, "overdrawing of power from [a] vehicle battery" cannot "rationally be considered a problem" when "battery heating is accomplished using *a power source external to the vehicle*." (*Id.*)

We agree with the Appellants that the Examiner does not address adequately why overdrawing of power from the vehicle battery would be a concern with Reed's vehicle preheating system. Reed discloses that battery preheating is accomplished using "external power rather than vehicle battery power" (Reed, Abstract) and is done "without drawing power from the

storage battery of the vehicle" (*id.* at col. 3, ll. 45–46). As such, the Examiner does not explain satisfactorily why one of ordinary skill in the art would consider a battery's life, and thus information relating thereto, significant to the workings of Reed's preheating system.

The Examiner seems to imply that, in Reed, the external power source supplies power to not just the "battery heater," but also the "battery" itself. (*See* Final Action 2; *see also* Answer 6.) Yet the Examiner does not point, with particularity, to where Reed teaches that its preheating system also charges the vehicle battery via the external power source. In Reed, a terminal block 24 "provide[s] an engine heating element outlet 28, battery warmer outlet 30, water line preheater outlet 32, and an auxiliary outlet 34 to supply electrical power to a plurality of heating devices" (Reed, col. 5, ll. 12–17, *see also* Fig. 2), but there is no outlet associated with charging the battery.

The Examiner does cite to a sentence in Reed that supposedly shows that it is "concerned for a deep discharging of the batter[y] that shortens its battery life." (Answer 7.) But the cited sentence simply says that [t]ypically, the vehicle battery is more deeply discharged during cold weather starting, which tends to shorten the life of such a battery even if the vehicle charging system is operating optimally." (Reed, col. 1, ll. 42–46.) This amounts to a teaching that a battery warmer (powered by an external power source) is an asset during winter months, regardless of the battery's life or information relating thereto.

The Examiner also maintains that "[i]t is known in the art that a vehicle battery would power its own electrical loads, which would include a battery heater." (Answer 6.) Be this as it may, Reed teaches the opposite

approach, as "household electric current" is used to power "a warming device for the battery," regardless of battery-life circumstances. (Reed, col. 3, ll. 53–54, col. 6, ll. 65–66.) Thus, with Reed's preheating system, there would be no occasion for battery power "to be disconnected as taught by Muramatsu and Ng" (Answer 6) when warming the vehicle battery for a cold start or otherwise.

The Appellants, therefore, argue persuasively that the Examiner does not establish that it would have been obvious to adapt Reed's controller to provide a heater control signal that is based on battery-life information. As for the additional prior art references (i.e., Ng, Ozawa, Zhu); they do not remedy the above-listed deficiency in the Examiner's proposed combination of Reed, Muramatsu, and Ng. (*See* Final Action 3–4.) The Examiner's further findings and determinations with respect to the dependent claims also do not compensate for this shortcoming. (*See id.* 3–5.)

Thus, we do not sustain the Examiner's rejection of claims 1, 6, 7, 9, 11, and 12 under 35 U.S.C. § 103(a) as unpatentable over Reed, Muramatsu, and Ng (Rejection I); we do not sustain the Examiner's rejection of claims 4, 5, and 13–18 under 35 U.S.C. § 103(a) as unpatentable over Reed, Muramatsu, Ng, and Ozawa (Rejection II); and we do not sustain the Examiner's rejection of claims 19 and 20 under 35 U.S.C. § 103(a) as unpatentable over Reed, Muramatsu, Ng, Ozawa, and Zhu (Rejection III).

DECISION

We REVERSE the Examiner's rejections of claims 1, 4–7, 9, and 11–20.

REVERSED