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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ALLAN ROY GALE, PAUL THEODORE MOMCILOVICH, and MICHAEL W. DEGNER

Appeal 2015-001613
Application 12/893,000
Technology Center 3600

Before KENNETH G. SCHOPFER, BRADLEY B. BAYAT, and MATTHEW S. MEYERS, *Administrative Patent Judges*.

BAYAT, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

STATEMENT OF CASE

Appellants[2] appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–15. We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE DECISION

We REVERSE.

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[1] Our decision references Appellants' Appeal Brief ("Appeal Br.," filed June 10, 2014) and Reply Brief ("Reply Br.," filed Dec. 1, 2014), the Examiner's Answer ("Ans.," mailed Sept. 29, 2014), and the Final Office Action ("Final Action," mailed Jan. 10, 2014).

[2] Appellants identify the real party in interest as "Ford Global Technologies, LLC" (Appeal Br. 2).

INVENTION

The invention is directed to a "system and method for controlling chassis coupling current" (Spec. 1, Title). Claims 1, 6, and 11 are the independent claims on appeal. Claim 1, reproduced below, is illustrative of the subject matter on appeal (Appeal Br., Claims App. 1).

> 1. An automotive vehicle comprising:
>
> a battery charger configured to receive electrical energy, via an electrical connection including a ground wire, from an electrical source remote from the vehicle and to output the electrical energy to at least one electrical load; and
>
> at least one controller configured to command a change in the electrical energy output by the battery charger, wherein the battery charger is further configured to, in response to the command, control a rate of change in the electrical energy output such that a coupling current to the ground wire resulting from the change in the electrical energy output by the battery charger has a magnitude less than a predetermined threshold.

REJECTIONS

1. Claims 1, 4–6, 9–11, 14, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cavanaugh (US 2012/0032634 A1, pub. Feb. 9, 2012).

2. Claims 2, 3, 7, 8, 12, and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cavanaugh and Godbole (US 2009/0160368 A1, pub. June 25, 2009).

ANALYSIS

In rejecting independent claim 1, the Examiner acknowledges that Cavanaugh fails to disclose "wherein the battery charger (20) is further configured to control a rate of change in the electrical energy output such that a coupling current to the ground wire resulting from the change in the

electrical energy output by the battery charger has a magnitude less than a predetermined threshold" (Final Act. 3). To cure this deficiency, the Examiner determines:

> It is well known that [a] ground-fault circuit interrupter[] is "a fast-acting circuit breaker designed to shut off electric power in the event of a ground-fault" and that it interrupts the current when the current amount leaving differs from the amount returning by approximately 5 mA (http[s]://www.osha.gov/SLTC/etools/construction/electrical_incidents/gfci.html). Cavanaugh discloses a vehicle battery recharging system that is plugged into an outlet to draw electricity to charge the vehicle battery (para. [0002]). It is inherent that the system is designed to work on regular basis without tripping the ground-fault circuit interrupters in the wall, or else the invention would be not usable. It would have been obvious to a person of ordinary skill in the art at the time of invention to design a recharging system that does not trip the ground-fault circuit interrupters but rather regulates the magnitude of the current to be less than the tripping threshold so that the batteries may be charged quickly and without interruption so as to make the vehicle drivable when needed.

(Final Act. 3–4.) According to the Examiner,

> "[g]round fault circuit interrupters are designed to trip when the difference between the current going to and returning from the equipment is approximately 5 milliamperes. This means that the equipment must send back a current that is less than 5 milliamperes. The coupling current is the current that is sent back, and it must be less than 5 milliamperes different from the current sent from the wall outlet in order not to trip the ground fault circuit interrupters."

(*Id.* at 11 (citation omitted).)

Appellants contend that the Examiner has not established a prima facie case of obviousness because the rejection of claim 1 is based on mere speculation (Appeal Br. 3). In particular, Appellants argue:

> A coupling current is a current flowing on a conductor (e.g., the ground wire) that is not one of the intended sending and return conductors. See, Application, p. 4, 11. 1-7 ("Current may then flow from the chassis 11, through the ground wire and to the GFI 22. According to (1), this chassis coupling current may exceed the 5 mA trip setting on the GFI 22 if the change in voltage per unit time on the electrical connections between the battery charger 12 and loads 14, 16 is large enough."). In an ideal design, the coupling current would be zero milliamperes at all times. Note that this is in stark contrast to the examiner's incorrect assertion that the coupling current "must be less than 5 milliamperes different from the current sent from the wall outlet in order not to trip the ground fault circuit interrupters," Office Action, January 10, p. 11, (emphasis added).

(*Id.* at 4–5.)

In the Answer, the Examiner states that "[t]he inherency is that in these interrupters, the system is designed to work at a level that is lower than the triggering threshold, since exceeding such threshold would trigger the interrupters and stop the flow of electricity" (Ans. 2). And

> [s]ince this teaching of designing circuits below certain thresholds are well known to one of ordinary skill in the art, it would have been obvious to apply such teaching to the teachings of the prior arts to design an electrical system that operates at a certain level of power below a threshold.

(*Id.* at 3.)

In reply, Appellants argue

> that the claims are not merely drawn to an electrical system that operates at a certain level of power below a threshold. . . . Cavanaugh's battery charger plus knowledge of GFCIs and fuses equals just that: a battery charger plus a GFCI or fuse. [According to Appellants, t]his does not suggest, for example, the limitations directed to the at least one controller[,]

as recited in the claim (Reply Br. 2).

We are persuaded by Appellants' arguments.

A rejection based on § 103 clearly must rest on a factual basis. The Examiner has the initial duty of supplying the factual basis for the rejection and may not resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis. We have reviewed the cited link describing GFCI, and we see no disclosure of modifying a controller as recited in the claim. In other words, the Examiner has not sufficiently shown why the knowledge of one skilled in the art of ground-fault interrupters can reasonably be interpreted to modify Cavanaugh's system to arrive at the claimed invention, as required by claim 1.

Accordingly, we do not sustain the rejection of independent claim 1 as obvious over Cavanaugh. For the same reasons, we do not sustain the rejections of claims 2–5 dependent thereon. *Cf. In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) ("dependent claims are nonobvious if the independent claims from which they depend are nonobvious"). Independent claims 6 and 11 recite similar limitations and the Examiner's rejection of claims 6 and 11 as obvious over Cavanaugh rely on the same findings as in claim 1. Thus, for the same reasons, we do not sustain the rejections of independent claims 6 and 11, including claims 7–10 and 12–15, dependent thereon.

DECISION

The Examiner's decision to reject claims 1–15 is reversed.

REVERSED