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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARKUS GREITHER

Appeal 2015-004807
Application 13/448,744
Technology Center 2800

Before JEFFREY T. SMITH, N. WHITNEY WILSON, and LILAN REN,
Administrative Patent Judges.

REN, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant¹ appeals under 35 U.S.C. § 134(a) from a rejection² of claims 1–6, 8–13, and 15. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ The real party in interest is identified as United Technologies Corp. (Appeal Brief, filed November 13, 2014 (“App. Br.”), 1.)

² Final Office Action mailed July 28, 2014 (“Final Office Action,” cited as “Final Act.”).

REJECTION

Claims 1–6, 8–13, and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Baba, and further in view of Hshieh and Zhou. (Final Act. 6.)

OPINION

After review of the respective positions provided by Appellant and the Examiner, we AFFIRM the Examiner’s prior art rejection of representative claim 1 under 35 U.S.C. § 103(a) for the reasons presented by the Examiner and add the following for emphasis.

Appellant argues⁴ that Baba does not teach a circuit having TVS diodes as recited in claim 1 because the circuit illustrated in Baba is a theoretical circuit and not an actual circuit. (App. Br. 4.) Appellant argues that because the actual circuit does not utilize TVS diodes, the Examiner erred in finding that TVS diodes are included in the theoretical circuit. (*Id.*)

Appellant, however, does not refute the Examiner’s finding that Baba’s circuit cited by the Examiner includes a transient voltage suppression diode between the gate and the collector of an insulated-gate bipolar transistor. (*Compare* Ans. 2 (citing Baba Fig. 8) *with* Reply 2–3.)⁵ Appellant does not dispute that the theoretical equivalent of an actual circuit illustrated in Baba uses a transient voltage suppression diode to protect a

⁴ Appellant does not present separate arguments for the remaining claims including independent claims 8 and 15. (App. Br. 3.) The remaining claims therefore stand or fall with claim 1.

⁵ Examiner’s Answer mailed February 12, 2015 (“Ans.”). Reply Brief filed March 24, 2015 (“Reply”).

transistor from overvoltage. (*Compare* Ans. 2 with Reply 2–3.) Appellant also does not dispute that Baba discloses a circuit having a silicon surge voltage suppressor which is a TVS diode. (*Compare* Ans. 2 (citing Baba 3–4, Figs. 7 & 8) with Reply 2–3.)

To prevail in an appeal to this Board, Appellant must adequately explain or identify reversible error in the Examiner’s §103(a) rejections. *See* 37 C.F.R. § 41.37(c)(1) (iv) (2012); *see also In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011). In this case, Appellant does not refute the Examiner’s finding with regard to the teaching of Baba. Appellant does not explain why a skilled artisan would have ignored Baba’s teaching of a circuit having TVS diodes. Appellant’s arguments therefore do not persuade us of reversible error in this aspect of the rejection.

Appellant next argues that the active clamped transistor circuit as recited in claim 1 operates reliably under low temperatures and thus achieves unexpected results. (App. Br. 4.) We are not persuaded. Claim 1, as it is currently written, does not recite any particular operating parameter of the recited circuit and Appellant’s argument cannot show patentability as a result. *See In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998) (unclaimed features cannot impart patentability to claims).

Appellant also argues that a skilled artisan would not have combined Hshieh and Baba because the circuit in Hshieh has two reverse facing Zener diodes but not TVS diodes. (App. Br. 4, 6.) Appellant argues that a skilled artisan would not have combined the references also because Zener diodes and TVS diodes are similar in terms of switching speed and temperature behavior and both are less expensive than the recited bi-directional TVS diode. (*Id.* at 4–5.)

The Examiner responds by explaining that because Zener diodes and TVS diodes are indeed similar, a skilled artisan would have used either to mitigate transient voltages. (Ans. 3.) The Examiner explains that the two reverse facing Zener diodes disclosed in Hsheih perform as a bi-directional Zener diode and a skilled artisan would have known how to modify the circuit in Baba based on Hshieh's teaching to better handle operating conditions including higher frequencies and lower voltages. (*Id.* at 5–6; Final Act. 7.) The Examiner explains that the diodes in Hshieh and Baba operate similarly during an overvoltage event. (Ans. 7.)

Based on the current evidence of record, Appellant's arguments do not persuade us of reversible error in the Examiner's rejection. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). "[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *Id.* at 417.

In this case, Appellant does not refute the Examiner's finding that both Zener diodes and TVS diodes may be used to mitigate transient voltages and that a skilled artisan would have known how to implement either in an active clamped transistor circuit. (*Compare* Ans. 3 with Reply 2–3.) Nor does Appellant refute the Examiner's finding that the two reverse facing Zener diodes disclosed in Hshieh perform as a bi-directional Zener diode. (*Compare* Ans. 5–6 with Reply 2–3.) Appellant does not refute the Examiner's finding that the diodes in Hshieh and Baba operate similarly. (*Compare* Ans. 7 with Reply 2–3.) Appellant also does not identify

reversible error in the Examiner's analysis that claim 1 is no more than an arrangement of known elements according to their respective known functions. (*Compare* Ans. 3 with Reply 2–3.)

Upon careful review of the record before us, Appellant's arguments have not adequately shown that a person of ordinary skill in the art, using no more than ordinary creativity, would not have recognized the suitability of utilizing known bi-directional TVS diode in an active clamped transistor circuit. *KSR*, 550 U.S. at 418 (holding that in making an obviousness determination one "can take account of the inferences and creative steps that a person of ordinary skill in the art would employ").

With regard to the argument that the Examiner's Answer fails to designate a new ground of rejection based on a reference known as Blakes (Reply 1), we first note that the Appellant has not shown that claim 1 is patentably distinguished over Baba, Hshieh, and Zhou as we analyzed *supra*.⁶ In any case, Appellant should have filed a petition under 37 CFR § 1.181(a) within two months from the mailing of the examiner's answer requesting that the rejection set forth in the answer be designated as a new ground of rejection. MPEP § 1207.03.

Our review of the record of the application underlying the present appeal reveals that Appellant did not file a petition under 37 C.F.R. § 1.181(a) within two months from the mailing of the Examiner's Answer requesting that a ground of rejection set forth in the Answer be designated as a new ground of rejection. Thus, in accordance with MPEP § 1207.03,

⁶ Because Appellant has not identified reversible error in the obviousness rejection based on Baba, Hshieh, and Zhou, we decline to address other references cited by the Examiner. (*See* Ans. 3; *see also* Reply 1–3.)

because Appellant did not timely raise the issue of the undesignated ground of rejection in the Answer by filing a petition under 37 C.F.R. § 1.181(a), Appellant has waived any argument that the Examiner's Answer contains an improper undesignated new ground of rejection.

Appellant next argues that Zhou does not disclose Zener diodes. (App. Br. 5.) Appellant also argue that a skilled artisan would not have combined Zhou with Baba and/or Hshieh because the insulated-gate bipolar transistors (IGBTs) taught in Baba and Zhou are not interchangeable with the field-effect-transistor (FETs) taught in Hshieh. (App. Br. 5.)

Appellant, however, does not persuasively refute the Examiner's explanation that the '744 Specification and the prior art references are directed to the same problem of protecting a transistor from transient voltages that would cause damage to the transistor. (*Compare* Ans. 6 with Reply 2–3.) Appellant does not refute the Examiner's finding that both IGBTs and FETs are transistors which can be used as power switches and that a skilled artisan would have known how to protect different types of circuits (FET or IGBT) in the same power switch application using prior art components and the prior art circuitries. (*Compare* Ans. 6, 7–8 with Reply 2–3.) Appellant has not established reversible error in this aspect of the obviousness analysis.

DECISION

The Examiner's rejection of claims 1–6, 8–13, and 15 is affirmed.

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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