

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RAED H. AHMAD and EKKEHARD PITTIUS

Appeal 2008-1642
Application 11/139,736¹
Technology Center 2800

Decided: January 7, 2009

Before ROBERT E. NAPPI, SCOTT R. BOALICK, and
JOHN A. JEFFERY, *Administrative Patent Judges*.

BOALICK, *Administrative Patent Judge*.

¹ Application filed May 27, 2005. The real party in interest is Siemens Energy & Automation, Inc.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the rejection of claims 1-22, all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

STATEMENT OF THE CASE

Appellants' invention relates to an energy management system for machines such as off-road traction vehicles.

Claim 1 is exemplary:

1. A method comprising:

at an auxiliary power system for an off-road traction vehicle, comprising:

via an active Insulating Gate Bipolar Transistor rectifier, converting a first AC signal to a DC signal and providing the DC signal to a DC bus; and

via an active Insulating Gate Bipolar Transistor inverter electrically coupled to the DC bus, converting the DC signal to a second AC signal and providing the second AC signal to an auxiliary device.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Kumar	US 6,615,118 B2	Sep. 2, 2003 ("Kumar '118")
Kumar	US 2003/0151387 A1	Aug. 14, 2003 ("Kumar '387")

Franz Haefner et al., "Electric Equipment for Diesel Multiple Units of the 610 Class of The German National Railways," 398 EB Electronic Railways, 91 (1993) July, No. 7, Munich, Federal Republic of Germany, see all figures, ("Haefner").

Claims 8-13 and 16 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 1-5 and 8-22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kumar '118 or Kumar '387.

Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being obvious over Kumar '118 or Kumar '387 and Haefner.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments that Appellants did not make in the Briefs have not been considered and are deemed to be waived. *See 37 C.F.R. § 41.37(c)(1)(vii).*

ISSUES

1. Have Appellants shown that the Examiner erred in rejecting claims 8-13 and 16 under 35 U.S.C. § 112, second paragraph, as being indefinite?

2. Have Appellants shown that the Examiner erred in rejecting claims 1-5 and 8-22 under 35 U.S.C. § 102(b) as being anticipated by Kumar '118 or Kumar '387? The resolution of this issue turns on whether the applied references teach an active Insulated Gate Bipolar Transistor rectifier.

3. Have Appellants shown that the Examiner erred in rejecting claims 6 and 7 under 35 U.S.C. § 103(a) as being obvious over Kumar '118 or Kumar '387 and Haefner?

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. Kumar '118 describes an "energy management system for use with off-highway vehicles." (Abstract.) Figure 1A, which "generally reflects a typical prior art diesel-electric locomotive" (col. 1, ll. 39-40), shows an alternator/rectifier 104 that provides DC power to an inverter 106. (Col. 1, ll. 45-46.) Kumar '118 teaches that an inverter converts DC to AC and a rectifier converts AC to DC. (Col. 1, ll. 54-55.) Kumar '118 teaches:

In a typical AC diesel-electric locomotive application, the AC electric power from the alternator is first rectified (converted to DC). The rectified AC is thereafter inverted (e.g., using power electronics such as Insulated Gate Bipolar Transistors (IGBTs) or thyristors operating as pulse width modulators) to provide a suitable form of AC power for the respective traction motor 108.

(Col. 1, ll. 60-67.) Kumar '118 makes no further mention of IGBTs.

2. Kumar '387 describes an "energy management system for use with a hybrid energy off highway vehicle." (Abstract.) Figure 1A, which "generally reflects a typical prior art diesel-electric Off Highway Vehicle" (paragraph [0008]), shows an alternator/rectifier 104 that

provides DC power to an inverter 106. (Paragraph [0009].) Kumar '387 teaches that an inverter converts DC to AC and a rectifier converts AC to DC. (Paragraph [0010].) Kumar '387 teaches:

In a typical AC diesel-electric Off Highway Vehicle application, the AC electric power from the alternator is first rectified (converted to DC). The rectified AC is thereafter inverted (e.g., using power electronics such as Insulated Gate Bipolar Transistors (IGBTs) or thyristors operating as pulse width modulators) to provide a suitable form of AC power for the respective traction motor 108.

(Paragraph [0010].) Kumar '387 makes no further mention of the use of IGBTs with either inverters or rectifiers.

3. Haefner does not describe the use of IGBTs with either inverters or rectifiers.

PRINCIPLES OF LAW

The purpose of the second paragraph of 35 U.S.C. § 112 "is to provide those who would endeavor, in future enterprise, to approach the area circumscribed by the claims of a patent, with the adequate notice demanded by due process of law, so that they may more readily and accurately determine the boundaries of protection involved and evaluate the possibility of infringement and dominance." *In re Hammack*, 427 F.2d 1378, 1382 (CCPA 1970). The test for definiteness under the second paragraph of 35 U.S.C. § 112 is "whether those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986).

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Also, during prosecution "if a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim unpatentable under 35 U.S.C. § 112, second paragraph, as indefinite." *Ex Parte Miyazaki*, No. 2007-3300, <http://www.uspto.gov/web/offices/dcom/bpai/prec/fd073300.pdf> at 11-12 (BPAI Nov. 19, 2008).

Anticipation is established when a single prior art reference discloses expressly or under the principles of inherency each and every limitation of the claimed invention. *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994). Under the principles of inherency, a reference anticipates if it necessarily includes or functions in accordance with the claimed limitations. *Atlas Powder*, 190 F.3d at 1347. Inherency may be established by extrinsic evidence, but "[s]uch evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991). Inherency may not be established by probabilities or possibilities, and "[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Id.*

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007).

ANALYSIS

We agree with Appellants (Reply Br. 6-7) that the Examiner erred in rejecting claims 8-13 and 16 as indefinite. The Examiner found that these "claims attempt to define the subject matter in terms of a result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result." (Ans. 3.)

Based on the quoted portion of the Examiner's rejection, it appears that the Examiner may have been concerned with the breadth of the claims as opposed to indefiniteness of the claims. It is perfectly permissible for the Appellant to claim the invention in terms as broad as the application disclosure will permit. In other words, the breadth of the claims is not equated with indefiniteness of the claims. *In re Miller*, 441 F.2d 689, 693 (CCPA 1971).

While claims 8-13 and 16 may be broad in scope, we cannot say that what is claimed is unclear or amenable to two or more plausible constructions. The Examiner has not explained why those skilled in the art would not understand what is claimed when claims 8-13 and 16 are read in light of the Specification or why the claimed subject matter is amenable to multiple plausible constructions. Therefore, we conclude that Appellants have shown that the Examiner erred in rejecting claims 8-13 and 16 as being indefinite.

On the record before us, we also agree with Appellants (App. Br. 13-14; Reply Br. 1-2) that Kumar '118 and Kumar '387 do not teach an active Insulated Gate Bipolar Transistor (IGBT) rectifier, as recited by independent claim 1. Although Kumar '118 and Kumar '387 teach inverting rectified AC (i.e., converting DC to AC) using IGBTs (FF 1, 2), they do not teach rectifying AC (i.e., converting AC to DC) using IGBTs (*id.*). Specifically, Kumar '118 and Kumar '387 do not teach that alternator/rectifier 104 uses IGBTs to provide DC power. (*See* FF 1,2.) Although it may be possible for Kumar '119 or Kumar '387 to use an active IGBT rectifier to convert an AC signal to a DC signal as claimed, the Examiner has not presented, and we do not find, evidence that either Kumar '118 or Kumar '387 necessarily does so.

Therefore, we conclude that Appellants have shown that the Examiner erred in rejecting independent claim 1 as well as claims 2-5 and 8-20, which depend from claim 1, under 35 U.S.C. § 102(b). Independent claims 21 and 22 recite limitations similar to that discussed with respect to independent claim 1, and we find the Examiner erred in rejecting independent claims 21 and 22 for the same reasons discussed with respect to claim 1.

Haefner, which was cited by the Examiner for teaching a transformer coupled to an inverter (Ans. 6-7) and a sinusoidal filter connected to an inverter (Ans. 7), does not remedy the above noted deficiencies of Kumar '118 and Kumar '387. (FF 3.) Therefore, for the reasons discussed with respect to independent claim 1, from which claims 6 and 7 depend, we conclude that Appellants have shown that the Examiner erred in rejecting claims 6 and 7 under 35 U.S.C. § 103.

CONCLUSION

We conclude that:

(1) Appellants have shown that the Examiner erred in rejecting claims 8-13 and 16 under 35 U.S.C. § 112, second paragraph, as being indefinite.

(2) Appellants have shown that the Examiner erred in rejecting claims 1-5 and 8-22 under 35 U.S.C. § 102(b) as being anticipated by Kumar '118 or Kumar '387.

(3) Appellants have shown that the Examiner erred in rejecting claims 6 and 7 under 35 U.S.C. § 103(a) as being obvious over Kumar '118 or Kumar '387 and Haefner.

DECISION

The rejection of claims 8-13 and 16 for indefiniteness under 35 U.S.C. § 112, second paragraph, is reversed.

The rejection of claims 1-5 and 8-22 for anticipation under 35 U.S.C. § 102(b) is reversed.

The rejection of claims 6 and 7 for obviousness under 35 U.S.C. § 103 is reversed.

REVERSED

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ack

cc:

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