

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN M. CALICO

Appeal 2008-1643
Application 11/222,305
Technology Center 2800

Decided: August 11, 2008

Before JOSEPH F. RUGGIERO, MAHSHID D. SAADAT, and
SCOTT R. BOALICK, *Administrative Patent Judges*.

RUGGIERO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from the Final Rejection of claims 48-53. Claims 1-47 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Appellant's invention relates to a d.c. brushless motor having a rotor with an axial shaft, a powder core compacted about the shaft, and a powder magnet compacted about the core. (Spec. 6-7).

Claim 48 is illustrative of the invention and reads as follows:

48. A d.c. brushless motor, comprising:

a stator; and

a rotor;

said rotor having a shaft, a core compacted about said shaft and a magnet compacted about said core;

said motor having a torque constant from 6.8% to 33.47% greater than the torque constant of an identically-dimensioned motor having a core formed of solid 12L14 steel.

The Examiner's Answer cites the following prior art references:

Nishimoto	US 2002/0003006 A1	Jan. 10, 2002
Gay	US 6,423,264 B1	Jul. 23, 2003 (filed Oct. 14, 1999)

Anthony C. Morcos and Peter Campbell, "Neo Magnets Boost Fuel Economy," Machine Design, 92-6 (September 2002) ("Morcos").¹

Claims 48-53, all of the appealed claims, stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gay in view of Nishimoto.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Briefs and Answer for the respective details. Only those arguments actually made by Appellant have been considered in this

¹ The Morcos reference is not part of the Examiner's stated ground of rejection but, rather, is cited as evidence in support of the Examiner's position.

decision. Arguments which Appellant could have made but chose not to make in the Briefs have not been considered and are deemed to be waived [see 37 C.F.R. § 41.37(c)(1)(vii)].

ISSUE

Under 35 U.S.C. § 103(a), with respect to appealed claims 48-53, would one of ordinary skill in the art at the time of the invention have found it obvious to combine Gay and Nishimoto to render the claimed invention unpatentable?

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Furthermore,

‘there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness’ . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

ANALYSIS

With respect to the Examiner's 35 U.S.C. § 103(a) rejection of appealed independent claims 48 and 53 based on the combination of Gay and Nishimoto, Appellant's arguments assert a failure to set forth a prima facie case of obviousness since all of the claimed limitations are not taught or suggested by the applied prior art references. Appellant's arguments (App. Br. 7-12; Reply Br. 1-2) focus on the contention that, in contrast to the claimed invention, neither of the applied Gay and Nishimoto references, or their combination, discloses a motor with a compacted core having a torque constant of 6.8-33.47% greater than motor with a solid 12L14 steel core as set forth in independent claim 48. Similarly, Appellant contends (App. Br. 14-15; Reply Br. 2) that the applied prior art does not teach or suggest a motor rotor with an exchange spring neodymium core having a flux density 18-33.5% greater than an identical compression molded isotropic powder magnet as recited in independent claim 53.

We do not find Appellant's arguments to be persuasive in convincing us of any error in the Examiner's stated position (Ans. 4-5) which finds that to optimize the torque constant and flux density variables to the claimed values would have been obvious to the skilled artisan. As pointed out by the Examiner, Appellant does not dispute that the general motor structure set forth in independent claims 48 and 53 is taught by Gay and Nishimoto with the exception of the particular range of values for the torque constant and flux density variables. The Examiner has provided evidence on the record,

i.e., the Morcos document, which indicates that torque constant and flux density are result-effective variables for motors that provide higher motor-efficiencies. In other words, the optimization of result effective variables in motor structure design would be expected to provide a motor structure with increased performance.

Further, it is well settled that "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456 (CCPA 1955). *See also In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.") Further, in *In re Huang*, 100 F. 3d 135, 139 (Fed. Cir. 1996), the Court stated:

This court and its predecessors have long held, however, that even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art, unless the claimed ranges 'produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art'.

We also agree with the Examiner (Ans. 7) that Appellant has simply provided no evidence of any unexpected results or any teaching away by the prior art from the claimed ranges of torque constant and flux density values. To the contrary, we find that the exemplary illustrations in Appellant's Figures 6A-6C, described at pages 15 and 16 of the Specification, do not provide any indication of unexpected results of the claimed motor structure in independent claim 48. For example, the motor structure set forth in claim

48 includes a rotor with a compacted core and a compacted magnet around the rotor shaft. The illustrated examples in Appellant's Figures 6A-6C, however, do not compare a compacted core rotor with a steel core rotor but instead, compare a steel core rotor, Figure 6A, formed by dynamic magnetic compaction (DMC) with steel core rotors formed by compression molding (Figures 6B-6C).

Appellant's exemplary illustrations in Figures 7A-7B, described at page 16 of the Specification, are equally deficient in showing any unexpected results of the motor structure set forth in independent claim 53. The motor structure recited in claim 53 includes a core of exchange spring nano-powder neodymium compacted about a rotor shaft. The illustrated examples in Appellant's Figures 7A-7B, on the other hand, do not involve a comparative analysis of a neodymium rotor core but, rather, compare a neodymium permanent magnet, Figure 7A, formed by dynamic magnetic compaction (DMC) with a neodymium permanent magnet formed by compression molding.

In view of the above discussion, since the Examiner's prima facie case of obviousness has not been overcome by any convincing arguments from Appellant, we sustain the Examiner's 35 U.S.C. § 103(a) rejection, based on the combination of Gay and Nishimoto, of independent claims 48 and 53, as well as dependent claims 49-52 not separately argued by Appellant.

Appeal 2008-1643
Application 11/222,305

CONCLUSION

In summary, we have sustained the Examiner's 35 U.S.C. § 103(a) rejections of all of the claims on appeal. Therefore, the decision of the Examiner rejecting claims 48-53 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

gvw

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