

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SATORU AKUTSU, TETSUNAO TAKAKI, HIDEKI MEGATA,
TOSHINORI TANAKA, and TAKESHI SUGIYAMA

Appeal No. 2006-2965
Application 10/320,628
Technology Center 2800

Decided: February 21, 2007

Before JAMES D. THOMAS, MAHSHID D. SAADAT,
and JEAN R. HOMERE, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal from the Examiner's final rejection of claims 1 through 3 pursuant to 35 U.S.C. § 134. We have jurisdiction under 35 U.S.C. § 6(b) to decide this appeal.

The Examiner rejected claims 1 through 3 as follows:

1. Claims 1 and 2 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over the combination of AAPA and Ohshita.
2. Claim 3 stands rejected under 35 U.S.C. § 103 (a) as being unpatentable over the combination of AAPA, Oshita and Saito.

The Examiner relies on the following references:

Saito	US 4,346,253	Aug. 24, 1982
Ohshita	US 6,044,545	Apr. 4, 2000

Applicants' Admitted Prior Art (AAPA), specification, pages 1, 2, Figures 14, 15.

Independent claim 1 is illustrative and representative of the Appellants' invention. It reads as follows:

1. A rotation angle detector comprising:
 - a sensor core in which a plurality of teeth are formed on an inner circumferential portion of an annular yoke;
 - a sensor coil comprising an excitation winding and an output winding each constructed by installing a conductor wire on said teeth;

an insulator mounted to said sensor core so as to electrically insulate said sensor core and said sensor coil;

a connector formed integrally with said insulator so as to be positioned on an outer circumferential side of said yoke; and

a sensor rotor rotatably disposed inside said yoke,

wherein lead wire portions of said conductor wires constituting said excitation winding and said output winding are each joined to a terminal pin of said connector on a first surface side of said insulator so as to have a predetermined amount of slack, said predetermination based on differences in thermal expansion between the conductor wire and the insulator.

Appellants contend that claims 1 through 3 would not have been obvious over AAPA in combination with Ohshita.¹ Particularly, Appellants contend that Ohshita does not fairly teach or suggest a predetermined amount of slack based on differences in thermal expansion between the conductor wire and the insulator, as recited in claim 1. (Appeal Br. 9-10; Reply Br. 4).

¹ This decision considers only those arguments that Appellants submitted in the Appeal and Reply Briefs. Arguments that Appellants could have made but chose not to make in the Briefs are deemed to have been waived. *See* 37 CFR 41.37(c)(1) (vii)(eff. Sept. 13, 2004). *See also In re Watts*, 354 F.3d 1362, 1368, 69 USPQ2d 1453, 1458 (Fed. Cir. 2004).

The Examiner contends that Ohshita teaches the claimed predetermined slack by using a longitudinal rod to form enough slack in the winding to prevent breakage in the windings due to changes in the temperature of the stator (Examiner's Answer, 5,7). The Examiner therefore concludes that it would have been obvious to one of ordinary skill in the art to combine AAPA with Ohshita to yield the claimed invention.

We affirm.

ISSUES

The *pivotal* issue in the appeal before us is as follows:
Under 35 U.S.C. § 103 (a), would one of ordinary skill in the art at the time of the present invention, have found the AAPA-Ohshita combination renders the claimed invention unpatentable when Ohshita teaches forming slack portions by removing from the windings a previously inserted rod member subsequently to joining the winding ends to the terminal pins?

FINDINGS OF FACT

Appellants invented a rotation angle detector (10) for detecting a rotational position of a rotor in a dynamo electric machine. (Specification 1). Particularly, the invention aims at providing a predetermined amount of slack in the wound portions (figure 6, element R1, R2; figure 8, element S1,

S3) of the winding and the terminal pins (27) to reduce the tensile stress resulting from temperature changes. (Specification 5). As depicted in figures 6 through 8, the invention joins each of the lead portions of a conductor wire (30) (i.e. excitation winding 31 and output winding 32), to one of the terminal pins (27) of a connector (25) on the surface side of an insulator (23) mounted on the sensor core ((21). The lead wire portions (31, 32) are joined to the terminal pins (27) in such a way to create a predetermined amount of slack based on differences in thermal expansion between the conductor wire (30) and the insulator (23). (Specification 12, 18-20).

Ohshita discloses a stator winding structure (figure 3) that allows windings to resist vibration, impact and possible breakage following changes in the stator temperature. (col. 1, ll. 5 through 1). As depicted in figure 2, Ohshita teaches inserting and positioning a longitudinal rod (10) between the teeth (2) of the stator (1) and the terminal (6) before joining the end portions (4a) of the winding (4) to terminal pins (6) of the terminal plate (5) disposed in the stator (col. 2, lines 21-26). Additionally, Ohshita teaches removing the longitudinal rod member subsequently to joining the winding ends (4a) to the terminal pins (6) to form the slack portions (4aA) to the winding ends (4a). (col. 2, ll. 30-33).

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). *See also In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing that some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art suggests the claimed subject matter. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellants. *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444. *See also Piasecki*, 745 F.2d at 1472, 223 USPQ at 788. Thus, the Examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the Examiner's conclusion.

ANALYSIS

The Examiner properly relied upon Ohshita's teachings to cure the deficiencies of AAPA. Particularly, the Examiner properly found that Ohshita's teaching of using a longitudinal rod to form a slack corresponds to

Appellants' claim limitation of forming a predetermined amount of slack based on the difference in thermal expansion between the conductor wire and the insulator. One of ordinary skill in the art would have readily recognized that the amount of slack resulting upon removing the rod from the windings is dependent upon the thickness of the selected rod previously inserted in the windings. Therefore, the ordinary skilled artisan would have readily recognized that depending on the desired difference in thermal expansion that needs to be compensated for, the longitudinal rod is selected with the necessary thickness and inserted in the windings to consequently result in the desired slack upon removing the rod from the windings. After considering the entire record before us, we find that the Examiner did not err in rejecting claim 1 over the combination of AAPA and Ohshita. We also find that the Examiner did not err in rejecting dependent claims 2 and 3 over the combination of AAPA and Ohshita.²

² Appellants have not presented any substantive arguments directed separately to the patentability of the dependent claims. In the absence of a separate argument with respect to the dependent claims, those claims stand or fall with the representative independent claim. *See In re Young*, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii).

CONCLUSION OF LAW

On the record before us, one of ordinary skill in the art, at the time of the present invention, would have found that the AAPA-Ohshita combination renders the claimed invention unpatentable under 35 U.S.C. § 103 (a) when Ohshita teaches forming slack portions by removing from the windings a previously-inserted rod member subsequently to joining the winding ends to the terminal pins.

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).

Appeal 2006-2965
Application 10/320,628

AFFIRMED

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