

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and is not binding precedent of the Board.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 INTERFERENCE

Ex parte KING W. CHAN and HOMER G. HARGROVE

Appeal No. 2006-1799
Application No. 10/269,955

ON BRIEF

Before THOMAS, RUGGIERO, and SAADAT, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claims 21-34, which are all of the claims pending in this application. Claims 1-20 have been canceled. An amendment filed November 8, 2004 after final rejection was denied entry by the Examiner.

Appeal No. 2006-1799
Application No. 10/269,955

The claimed invention relates to a dynamoelectric machine including a rotor, a stator surrounding the rotor, and a generator housing which surrounds both the rotor and the stator. Further included is at least one blower for generating a cooling gas flow within the generator housing to cool the stator and the rotor. The dynamoelectric machine also includes, within the generator housing, a first arcuate heat exchanger which surrounds the stator and a second arcuate heat exchanger adjacent a first end of the stator.

Claim 21 is illustrative of the invention and reads as follows:

21. A dynamoelectric machine comprising:

a rotor defining an axis;

a stator surrounding said rotor;

a generator housing surrounding said rotor and said stator;

a first blower for generating a first cooling gas flow within said generator housing for cooling said stator and said rotor;

a first arcuate heat exchanger within said generator housing and surrounding said stator for extracting heat from the first cooling gas flow, said first arcuate heat exchanger comprising a first bundle of cooling tubes extending in a first plane transverse to the axis; and

a second arcuate heat exchanger within said generator housing and adjacent a first end of said stator for also extracting heat from the first cooling gas flow, said second arcuate heat exchanger comprising a second bundle of cooling tubes extending in a second plane transverse to the axis.

The Examiner relies on the following prior art:

Jacobsen	2,460,752	Feb. 01, 1949
Kleinhans	4,845,394	Jul. 04, 1989
Sheerin	5,844,333	Dec. 01, 1998
Martins	6,343,646	Feb. 05, 2002

Appeal No. 2006-1799
Application No. 10/269,955

Claims 21-34, all of the appealed claims, stand finally rejected under 35 U.S.C. § 103(a). As evidence of obviousness, the Examiner offers Jacobsen alone with respect to claims 21-23 and 29-31, adds Martins to Jacobsen with respect to claims 24, 25, 32, and 33, adds Sheerin to Jacobsen with respect to claims 26 and 34, and adds Kleinhans to Jacobsen with respect to claims 27 and 28.¹

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Briefs² and Answer for their respective details.

¹ As indicated at page 7 of the Answer, the Examiner has withdrawn the 35 U.S.C. § 112, second paragraph, rejection of claims 21-34.

² The Appeal Brief was filed March 25, 2005. In response to the Examiner's Answer mailed May 20, 2005, a Reply Brief was filed July 19, 2005 which was acknowledged and entered by the Examiner as indicated in the communication mailed October 4, 2005.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the Examiner and the evidence of obviousness relied upon by the Examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellants' arguments set forth in the Briefs along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 21-34. Accordingly, we reverse.

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, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). The examiner must articulate reasons for the examiner's decision. In re Lee, 277 F.3d 1338, 1342, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). In particular, the examiner must show that there is a teaching, motivation, or suggestion of a motivation to combine references relied on as evidence of obviousness. Id. at 1343. The examiner cannot simply reach conclusions based on the examiner's own understanding

Appeal No. 2006-1799
Application No. 10/269,955

or experience – or on his or her assessment of what would be basic knowledge or common sense. Rather, the examiner must point to some concrete evidence in the record in support of these findings. In re Zurko, 258 F.3d 1379, 1386, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001). 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. However, a suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, as the teaching, motivation, or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art,

Appeal No. 2006-1799
Application No. 10/269,955

and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. In re Kahn, 441 F.3d 977, 987-88, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) citing In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000). See also In re Thrift, 298 F.3d 1357, 1363, 63 USPQ2d 2002, 2008 (Fed. Cir. 2002). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.; In re Hedges, 783 F.2d 1038, 1040, 228 USPQ 685, 687 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 146-147 (CCPA 1976).

With respect to appealed independent claims 21 and 29, Appellants' arguments in response to the obviousness rejection assert a failure by the Examiner to establish a prima facie case of obviousness since all of the claimed limitations are not taught or suggested by the applied prior art reference. After reviewing the applied Jacobsen reference in light of the arguments of record, we are in general agreement with Appellants' position as stated in the Briefs.

Appeal No. 2006-1799
Application No. 10/269,955

It is our view that the Examiner has improperly relied on a per se rule of obviousness that merely adding additional parts, such as a second arcuate heat exchanger in the present factual

Appeal No. 2006-1799
Application No. 10/269,955

situation, is not patentable. The issue of obviousness must always be determined on a case by case basis considering the specific recitations of the claimed invention and the specific teachings of the applied prior art.

We don't necessarily disagree with the Examiner's apparent implied position that increasing the structural capacity of a heat exchanger would extract more heat from the gas in the generator housing of Jacobsen. There is no evidence forthcoming from the Examiner, however, to support the position that increasing heat exchanger physical capacity would necessarily entail adding a second heat exchanger to Jacobsen's existing heat exchanger. For example, adding physical capacity to the heat exchanger structure in Jacobsen could simply involve making the existing heat exchanger larger.

We are also of the opinion that even assuming, arguendo, the obviousness of adding a second heat exchanger to the generator housing of Jacobsen, there is no indication from the Examiner as to how the mere addition of such a heat exchanger would satisfy the requirements of independent claims 21 and 29. These claims set forth a specific dual heat exchanger arrangement requiring a first heat exchanger that surrounds the stator and a second heat exchanger that is adjacent an end of the stator. In our view, any suggestion to place a hypothetically added second heat exchanger to the device of Jacobsen at a location adjacent a stator end as claimed could

Appeal No. 2006-1799
Application No. 10/269,955

come only from Appellants' own disclosure and not from any teaching or suggestion in the Jacobsen reference. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F. 2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992).

In view of the above discussion, since the Examiner has not established a prima facie case of obviousness, the 35 U.S.C. § 103(a) rejection of independent claims 21 and 29, as well as claims 22, 23, 30, and 31 dependent thereon, based on the Jacobsen reference, is not sustained.

We also do not sustain the Examiner's 35 U.S.C. § 103(a) rejection of dependent claims 24-28 and 32-34 in which the Martins, Sheerin, and Kleinhans references are combined with Jacobsen to address, respectively, the coolant tube plates, cooling fins, and plural blower features of these dependent claims. We find nothing in the Martins, Sheerin, or Kleinhans references, taken collectively or individually, that would overcome the innate deficiencies of Jacobsen discussed, supra.

Appeal No. 2006-1799
Application No. 10/269,955

In summary, we have not sustained the Examiner's rejection of any of the claims on appeal. Therefore, the decision of the Examiner rejecting claims 21-34 under 35 U.S.C. § 103(a) is reversed.

REVERSED

JAMES D. THOMAS)
Administrative Patent Judge)
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) BOARD OF PATENT
JOSEPH F. RUGGIERO) APPEALS
Administrative Patent Judge) AND INTERFERENCES
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MAHSHID D. SAADAT)
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Appeal No. 2006-1799
Application No. 10/269,955

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