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Datasheet for the decision of 21 January 2015

Case Number: T 0794/10 - 3.5.02

Application Number: 02256548.5

Publication Number: 1401087

IPC: H02K7/12, H02K21/00, H02K23/44, H02K16/00

Language of the proceedings: EN

Title of invention:
Axially movable rotor

Applicant:
Yang, Tai-Her

Relevant legal provisions:
EPC Art. 83, 123(2)

Keyword:
Sufficiency of disclosure - main request (no)
Amendments -
extension beyond the content of the application as filed -
auxiliary request (yes) - intermediate generalisation

Catchword:

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Case Number: T 0794/10 - 3.5.02

D E C I S I O N
of Technical Board of Appeal 3.5.02
of 21 January 2015

Appellant: (Applicant)	Yang, Tai-Her No. 59, Chung Hsing 8 Street Si-Hu Town, Dzan-Hwa (TW)
Representative:	Wright, Howard Hugh Burnby Withers & Rogers LLP 4 More London Riverside London SE1 2AU (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 4 December 2009 refusing European patent application No. 02256548.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	M. Ruggiu
Members:	G. Flyng
	P. Mühlens

Summary of Facts and Submissions

I. **Contested decision**

The applicant's appeal concerns the examining division's decision to refuse the European patent application number 02 256 548.5.

The examining division found that the application did not meet the requirements of Article 123(2) EPC because the amended claims of all three requests (main and first and second auxiliary requests) included subject-matter which extended beyond the original disclosure.

In a section entitled "Additional comments" the examining division made a statement concerning inventive step.

II. **Grounds of appeal**

With the letter dated 31 March 2010 setting out the grounds of appeal the appellant (applicant) filed four sets of claims according to a main request and three auxiliary requests. The appellant requested that the Board consider each set of claims, overturn the decision of the examining division and allow the application. In the event that the board was minded to reach a decision in any way adverse to the appellant oral proceedings were requested.

III. **Summons to oral proceedings**

With a communication dated 10 October 2014 the Board summoned the appellant to oral proceedings to take place on 21 January 2015. In an annex to the summons the Board made observations on the appeal, in

particular making a reference to Article 83 EPC (sufficiency of disclosure).

IV. **Response to the summons to oral proceedings**

With a letter dated and filed electronically on 22 December 2014 the appellant withdrew the request for oral proceedings and requested continuation in writing.

The appellant requested the Board's consent to amend the claims according to a new main request and a new first auxiliary request, the claims of which were appended to the letter. The appellant stated that, provided the Board was happy to admit these new requests, the appellant withdrew the requests currently on file (i.e. those filed with the grounds of appeal).

Independent claim 1 of the **main request filed with the letter of 22 December 2014** reads as follows:

"1. An electric machine comprising:
a stator (H100);
a winding (W100);
a magnetic field structure (F100);
a rotor (R100) having a magnetic core, and the axial stack height of the magnetic core of the rotor is greater than that of the magnetic field structure;
the rotor comprising a multiple-section squirrel-cage, being an axial multiple-section circuit squirrel-cage rotor structure, and each section of the squirrel-cage rotor structure with different electric machinery characteristics;
a helical structure (SC100) situated between the rotor (R100) and a shaft (S100);
a pre-stressed spring (SP100) installed between at least one end of the rotor and the stator, wherein the

helical structure and the spring are arranged to enable axial displacement of the rotor relative to the shaft, the direction of said axial displacement depending on the direction of rotation of the shaft (S100) and the helical structure;

wherein the rotor (R100) is capable of performing axial displacement corresponding to the amount of the reverse torque in order to vary the magnetic coupling position between the rotor and the magnetic field structure (F100), and thereby vary the operational characteristics of the electrical machine."

Independent claim 1 of the **first auxiliary request filed with the letter of 22 December 2014** differs from claim 1 of the main request of the same date in that:

- the feature "*and each section of the squirrel-cage rotor structure with different electric machinery characteristics*" has been deleted;
- the feature "a helical structure (SC100) situated between ..." has been amended to read "a helical structure (SC100), which includes a helical propeller structure, situated between ...".

V. **Oral proceedings**

With a communication dated 14 January 2015 the Board advised the appellant that it was intended to continue with the oral proceedings as scheduled and drew attention to Article 13 of the Rules of Procedure of the Boards of Appeal (RPBA) regarding the admissibility of amendments to the appellant's case.

The oral proceedings took place as scheduled on 21 January 2015. As might be inferred from the letter of 22 December 2014, the appellant was not represented.

The Board considered the case and pronounced the present decision.

Reasons for the Decision

1. **Amendments to the appellant's case**

The Board considered that at least in some respects the new main and auxiliary requests filed with the letter of 22 December 2014 represent an attempt to deal with the points raised in the annex to the summons to oral proceedings and decided to exercise its discretion under Article 13 RPBA to admit the requests.

2. **Main Request**

2.1 According to the features now added to claim 1 of the main request, the rotor of the electric machine comprises an axial multiple-section circuit squirrel-cage rotor structure and each section of the squirrel-cage rotor structure has different electric machinery characteristics.

This feature was set out in claim 17 as originally filed. The only further disclosures in the application as filed that relate to this arrangement are those in figure 16 and in the following passages (see the published version, EP 1 401 087 A1):

- column 3, lines 6 to 8, which gives a brief description of figure 16;
- column 4, line 20 and claim 2 (column 14, lines 38 and 39), which mention that the rotor may be of the squirrel cage type ac; and
- paragraph [0017], in particular column 11, lines 8 to 17, which states "the electric machinery rotor coupled by the electric machinery magnetic field

> can be axial multiple-section circuit squirrel-cage rotor structure, and each section of squirrel-cage rotor structure with different electric machinery characteristics, as shown in Fig. 16 is the realization example of this invention in the squirrel-cage rotor structure with multiple circuit, in which the cross sectional illustration along A-A' is the same as in Fig. 2".

Whilst there is no explicit link in claim 1 between the squirrel cage rotor features discussed above and any particular technical effect, it can perhaps be implied that they are related to the effect mentioned in the final paragraph of claim 1, according to which the operational characteristics of the electrical machine can be varied by performing axial displacement of the rotor in order to vary the magnetic coupling position between the rotor and the magnetic field structure. This would appear to be supported by what is stated in column 11, lines 29 to 39 of the published application.

2.2 Article 83 EPC stipulates that the application shall disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

The Boards of Appeal have consistently held that an invention is in principle sufficiently disclosed if at least one way is clearly indicated enabling the person skilled in the art to carry out the invention (see Case Law of the Boards of Appeal, 7th edition 2013, II.C. 4.2, "Indication of at least 'one way'").

2.3 In the present case the Board looked at the question whether the application clearly indicated at least one

way that enabled the person skilled in the art to carry out those features of the claimed invention according to which the rotor of the electric machine comprises an axial multiple-section circuit squirrel-cage rotor structure and each section of the squirrel-cage rotor structure has different electric machinery characteristics.

The Board noted that there is no discussion whatsoever in the application as filed as to how various axial sections of the multiple-section squirrel cage rotor might be arranged. Furthermore, there is no discussion of what characteristic or characteristics of the squirrel-cage rotor structure might be chosen to differ in the various axial sections. What's more, there is no discussion of what variations in the operational characteristics of the electrical machine might result when any particular squirrel-cage rotor characteristic is chosen to be different in the various axial sections.

In other words, it is left completely in the hands of reader to work out how the basic idea of using a squirrel-cage rotor having multiple section with differing characteristics might be put into practice to achieve some particular, usable technical effect.

Given the seemingly limitless number of ways in which multiple axial sections might be arranged and the large number different characteristics of a squirrel cage rotor that could be varied, the Board considers that the skilled person would not be able, on the basis of the disclosure as a whole and using his common general knowledge, to identify the technical measures necessary to solve any particular technical problem without undue burden.

The Board concluded that the application according to the main request does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, Article 83 EPC.

2.4 The appellant has argued that "given the provision of highly detailed technical drawings within the specification, and the detailed nature of the description, a person skilled in the art would have no difficulty carrying out the invention as claimed herein". The Board was not convinced by this argument because neither the drawings nor the description give any details regarding the multi-section squirrel cage rotor as claimed in the main request.

3. **Auxiliary Request**

3.1 Independent claim 1 of the auxiliary request differs from claim 1 of the main request in that the feature "*and each section of the squirrel-cage rotor structure with different electric machinery characteristics*" has been deleted. The feature still remains that the rotor comprises "*a multiple-section squirrel-cage, being an axial multiple-section circuit squirrel-cage rotor structure*".

3.2 Claim 1 of the auxiliary request includes an arrangement in which the various sections of the axial multiple-section squirrel-cage rotor structure have the same electric machinery characteristics. Given that in the application as filed, a multiple-section squirrel-cage rotor is only disclosed in the context where each section of the squirrel-cage rotor structure has different electric machinery characteristics, claim 1

of the auxiliary request amends the application in such a way that it contains subject-matter which extends beyond the content of the application as filed, contrary to Article 123(2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar: The Chairman:

U. Bultmann M. Ruggiu

Decision electronically authenticated