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**Datasheet for the decision
of 26 July 2024**

Case Number: T 0190/21 - 3.5.02

Application Number: 11870651.4

Publication Number: 2741400

IPC: H02K1/27, H02K1/24

Language of the proceedings: EN

Title of invention:

Motor rotor and motor having same

Patent Proprietors:

Gree Electric Appliances, Inc. of Zhuhai
Gree Green Refrigeration Technology Center Co.
Ltd. of Zhuhai

Relevant legal provisions:

EPC Art. 123(1), 123(2), 123(3)
EPC R. 139, 80

Keyword:

Correction of an obvious error (no)
Amendments - extension beyond the content of the application
as filed (no) - extension of the protection conferred (no)

Decisions cited:

G 0001/10, T 0506/16, T 1668/08



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Case Number: T 0190/21 - 3.5.02

D E C I S I O N
of Technical Board of Appeal 3.5.02
of 26 July 2024

Appellant: Gree Electric Appliances, Inc. of Zhuhai
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 14 December
2020 revoking European patent No. 2741400
pursuant to Article 101(3) (b) EPC.**

Composition of the Board:

Chairwoman C. Vassoille
Members: H. Bronold
R. Cramer

Summary of Facts and Submissions

- I. The appeal of the patent proprietors (appellants) is against the decision of the opposition division revoking European patent no. 2 741 400.

- II. In the contested decision, the opposition division concluded that the ground for opposition under Article 100(c) EPC prejudiced the maintenance of the patent as granted and that claim 1 according to each of auxiliary requests I to XVII contravened Article 123(3) EPC.

In particular, the opposition division found that the wording "perpendicular to the **d-axis** of the rotor" (emphasis added by the board) in granted claim 1 extended beyond the content of the application as filed and that the amended wording "perpendicular to the **axis** of the rotor" (emphasis added by the board) in claim 1 according to each of auxiliary requests I to XVII extended the protection conferred by the patent as granted.

- III. The corresponding amendment from "axis" to "d-axis" had been proposed by the examining division in the text intended for grant annexed to the communication under Rule 71(3) EPC. Moreover, as indicated in that communication, this amendment had been done to "better define the axis and to avoid confusion with the rotating axis of the rotor".

- IV. The opponent withdrew their opposition before the oral proceedings before the opposition division and is therefore no longer a party to the proceedings.

- V. With their statement setting out the grounds of appeal the appellants filed a new main request and new auxiliary requests I, II and XIIX [sic] and declared auxiliary requests II to XVI, filed during the opposition proceedings, to be auxiliary requests III to XVII as well as auxiliary request XVII, filed during the opposition proceedings, to be auxiliary request XIX.

The appellants requested, *inter alia*, that the correction of "d-axis" in claim 1 of the patent as granted to "axis" in claim 1 of the new main request be allowed as a correction of an obvious error under Rule 139 EPC, or, if that was not possible, that the amendment be admitted under Rule 80 EPC.

The appellants further requested that the contested decision be set aside and that in case any of their new main request or auxiliary requests I and II be held by the board not to contravene Article 123(2) EPC and Article 123(3) EPC, the case be remitted to the opposition division for assessing novelty and inventive step.

- VI. Claim 1 according to the main request reads as follows:

"A motor rotor, comprising an iron core (10) and a plurality of sets of permanent magnets (20) provided inside the iron core (10), wherein:

a plurality of sets of mounting slots (30) are circumferentially distributed in the iron core (10); each set of mounting slots (30) comprises two or more layers of mounting slots (30) provided at intervals in radial direction of the iron core (10);

the permanent magnets (20) of each set of permanent magnets (20) are correspondingly embedded into the mounting slots (30) of each set of mounting slots;

each set of permanent magnets (20) comprises permanent magnets (20) having an arc-shaped cross section perpendicular to the axis of the rotor;

each permanent magnet (20) is in a shape of arc with gradual changing thickness; wherein the thickness is the largest in the center and gets smaller gradually at two ends;

characterised in that

each set of mounting slots (30) comprises a first mounting slot and a second mounting slot; the permanent magnet (20) embedded in the first mounting slot is a first permanent magnet; the permanent magnet (20) embedded in the second mounting slot is a second permanent magnet; and a formula $1/5 \leq g/T \leq 4/5$ is satisfied, wherein, T is the sum of thicknesses of all permanent magnets (20) of each set of permanent magnets (20), the thicknesses are taken along the direction of the symmetric line of the permanent magnets (20); g is the sum of distances between each two adjacent permanent magnets (20) of each set of permanent magnets (20), the distances are taken along the direction of the symmetric line of the permanent magnets (20)."

- VII. In view of the tenor of this decision, it is not necessary to cite the claims of the auxiliary requests at this point.
- VIII. The appellants' arguments which are of particular relevance for the decision are detailed below together with the reasons for the decision.

Reasons for the Decision

1. Decision in writing - Article 116 EPC

The appellants requested oral proceedings only as an auxiliary measure in case the contested decision was not set aside.

Since the board has come to the conclusion that the contested decision is to be set aside and the case is to be remitted to the opposition division in accordance with the appellants' requests, the appellants' request for oral proceedings does not become procedurally effective.

The decision could therefore be issued in writing without holding oral proceedings.

2. Correction of an obvious error - Rule 139 EPC

2.1 The appellants request that the amendment of "d-axis" in claim 1 of the patent as granted to "axis" in claim 1 of the present main request be allowed as a correction of an obvious error under Rule 139 EPC.

2.2 The opposition division in the contested decision found that a correction under Rule 139 EPC was not allowable, because it was not obvious for a person skilled in the art that an error had occurred in granted claim 1 in the amendment "perpendicular to the d-axis of the rotor".

2.3 Although the reasons given by the opposition division for its conclusion are not correct, the board has

reached the same conclusion, namely that the amendment made in the present main request cannot be allowed as a correction of an obvious error under Rule 139 EPC.

- 2.4 In the present case, the appellants' request, relying on Rule 139 EPC, seeks in principle to reverse an erroneous correction made by the examining division in the "text intended for grant" annexed to the communication under Rule 71(3) EPC, which was subsequently approved by the applicants. Rule 139 EPC, however, may not be used to correct the content of the decision to grant, thereby circumventing the restrictions under Rule 140 EPC (see G 1/10, Reasons 9 to 11).

Furthermore, as found by the Technical Board of Appeal in T 0506/16 (see Reasons 5), Rule 139 EPC is only applicable to documents filed with the EPO and does not extend to documents issued by it, e.g. the decision to grant. This is clear from the wording of Rule 139 EPC (English: "filed with"; French: "produit[-] auprès"; German: "bei[-]... eingereicht"). When applied to opposition proceedings, this means that Rule 139 EPC only applies to documents filed during opposition proceedings (see also the Guidelines for Examination in the EPO, H-VI, 2.1.1).

- 2.5 For the above reasons, the board concluded that Rule 139 EPC cannot provide a legal basis for allowing the amendment made in claim 1 of the new main request.

3. Amendment of the European patent - Rule 80 EPC

- 3.1 The appellants further request that the amendment of claim 1 of the current main request be allowed under

Rule 80 EPC if correction under Rule 139 EPC is not possible.

3.2 As found by the Enlarged Board of Appeal in G 1/10 (see Reasons 13), during opposition proceedings, it is always open to a patent proprietor to seek to amend his patent and such an amendment could remove a perceived error. Accordingly, Article 123(1) EPC states that the European patent application or European patent may be amended in proceedings before the European Patent Office, in accordance with the Implementing Regulations. Furthermore, according to Rule 80 EPC, the description, claims and drawings may be amended, provided that the amendments are occasioned by a ground for opposition under Article 100 EPC, even if that ground has not been invoked by the opponent.

3.3 The amendment made in claim 1 of the main request is clearly occasioned by a ground for opposition, namely the ground for opposition under Article 100(c) EPC.

3.4 The amendment being made in the current main request is therefore considered by the board as a request for an amendment under Article 123(1) EPC, which satisfies the requirement of Rule 80 EPC and which has to satisfy all the legal requirements for amendments including those of Article 123 EPC.

4. Admissibility of the amendment - Article 123(2) EPC

The amendment in claim 1 according to the main request from "d-axis" to "axis" restores the wording to what was originally disclosed, *inter alia*, in originally filed claims 1, 6 and 9 and paragraph [0035], lines 35 to 38.

Consequently, the amendment meets the requirement of Article 123(2) EPC.

5. No extension of the protection conferred by the amendment - Article 123(3) EPC
- 5.1 In the contested decision, the opposition division concluded that replacing the term "d-axis" by the term "axis" contravened Article 123(3) EPC.
- 5.2 The board agrees with the appellants that the protection conferred by claim 1 according to the new main request is not extended by the amendment and that claim 1 of the new main request thus does not contravene Article 123(3) EPC.
- 5.3 The protection conferred by granted claim 1 has to be analysed as a basis for determining whether the protection conferred by amended claim 1 is extended.
- 5.4 According to Article 69(1) EPC, the extent of the protection conferred by a European patent or a European patent application shall be determined by the claims. Nevertheless, the description and drawings shall be used to interpret the claims. Furthermore, according to the Protocol on the Interpretation of Article 69 EPC, Article 69 should not be interpreted as meaning that the extent of the protection conferred by a European patent is to be understood as that defined by the strict, literal meaning of the wording used in the claims, the description and drawings being employed only for the purpose of resolving an ambiguity found in the claims. Nor should it be taken to mean that the claims serve only as a guideline and that the actual

protection conferred may extend to what, from a consideration of the description and drawings by a person skilled in the art, the patent proprietor has contemplated. On the contrary, it is to be interpreted as defining a position between these extremes which combines a fair protection for the patent proprietor with a reasonable degree of legal certainty for third parties.

- 5.5 Claim 1 as granted includes the wording "perpendicular to the d-axis of the rotor". The skilled person in the field of motor rotors is familiar with the terminology and context of both mechanical and electrical/magnetic components in motor construction. In particular, the skilled person is well aware that a rotational axis of an electric machine is not normally referred to as "d-axis", as correctly argued by the appellants. According to the common general knowledge of the skilled person, the term "d-axis" defines the direction of magnetic flux in an electric machine. That means, the "d-axis" refers to the magnetic system of the electric machine rather than to the mechanical system of an electric machine.

In the board's view there can be no doubt, however, that the skilled person would have recognised the purely mechanical nature of claim 1, which essentially refers to sets of mounting slots in an iron core of the rotor and sets of permanent magnets embedded therein and further defining a formula about the thicknesses of the permanent magnets and the distances between two adjacent permanent magnets. In conclusion, it is clear from the overall context of claim 1 that it refers to the physical structure of the motor rotor and that claim 1 in no way refers to the electrical or magnetic properties of the rotor. Therefore, although the term

"d-axis" normally refers to a magnetic property of the rotor, the skilled person would have readily recognised that the wording "perpendicular to the d-axis of the rotor" does not refer to an axis in the magnetic system of the rotor, since this would be in complete contradiction with the overall wording of the claim and, in particular, because the rotor simply does not have a "d-axis" in the mechanical sense, as was rightly argued by the appellants. In this context, it should also be noted that the claim itself does not contain any definition of the "d-axis" of the rotor.

This understanding of claim 1 is also fully consistent with the description and drawings of the patent, which are to be used to determine the scope of protection in accordance with Article 69 EPC and the Protocol on its interpretation.

In particular, the board considers it self-evident that when comparing the feature in question, "perpendicular to the d-axis of the rotor", with the content of the description and drawings, in particular paragraphs [0012] to [0015], [0030], [0037] and [0040] as well as figures 1, 2, 4 and 5 as originally filed, a person skilled in the art would have immediately realised that claim 1 refers to the rotational axis of the rotor, which is consistently referred to in the description as the "axis of the rotor".

- 5.6 For the sake of completeness, the board notes that it also agrees with the appellants that a rotor built as proposed by the opposition division would not work in an electric machine. The opposition division's arguments completely ignore the fact that in the technical field concerned, permanent magnets with arc-shaped cross-sections are used for a specific purpose,

namely that of guiding the magnetic flux in the rotor. This however requires that the arc-shaped permanent magnets are oriented exactly in the way described and shown in the patent but not claimed due to an error of the examining division. A configuration as proposed in the contested decision, having the arc-shaped cross-sections of the permanent magnets arranged perpendicular to the d-axis of the rotor, i.e. along the rotational axis of the rotor, would not provide this well-known technical effect of arc-shaped permanent magnets.

5.7 Furthermore, the board does not agree with the opposition division that the rotor according to the wording of claim 1 is "apparently physically possible" as stated in the contested decision. As already pointed out above, the claim construction as represented in the contested decision which assumes that using discs with openings or plural applications of a filler material, one could build the claimed rotor even in case the arc-shaped cross-sections of the permanent magnets were perpendicular to the d-axis of the rotor, is neither feasible in practice nor does it represent a proper construction of claim 1.

5.8 Thus, when determining the protection conferred by claim 1, it is evident that the skilled person would have readily understood the expression "perpendicular to the d-axis of the rotor" in claim 1 of the patent as granted to mean "perpendicular to the axis of the rotor". Consequently, for the skilled person the protection conferred by claim 1 as granted would have been what was originally disclosed, namely a motor rotor in which *inter alia* the permanent magnets have an arc-shaped cross-section perpendicular to the axis of the rotor.

5.9 The board therefore concludes that the protection conferred by granted claim 1 is identical to the protection conferred by claim 1 according to the current main request and thus meets the requirement of Article 123(3) EPC.

6. Conclusion

Consequently, the board concludes that claim 1 according to the main request meets the requirement of Article 123(2) EPC and does not contravene Article 123(3) EPC.

7. Remittal to the department of first instance

7.1 The appellants requested remittal of the case to the department of first instance for assessing novelty and inventive step in the event that the board considers any of the new main request, new auxiliary request I and new auxiliary request II to be allowable under Article 123(2) and (3) EPC.

7.2 In the notice of opposition, the former opponent raised objections under Article 100(a) EPC in conjunction with Articles 54 and 56 EPC based on, *inter alia*, documents E1, E2, E3 and E4.

7.3 In the light of the withdrawal of the opposition, the board had in particular to decide on the question of whether the new main request meets the requirement of Article 123(3) EPC. In the circumstances, however, it does not consider it appropriate to decide on the objections under Articles 54 and 56 EPC, on which the

appellants have not provided any arguments in their statement of grounds of appeal and which are therefore not part of the appellants' appeal case (Article 12(3) RPBA).

7.4 The board therefore decided to remit the matter to the opposition division for further prosecution and in particular for examination for compliance with the requirements of Articles 54 and 56 EPC.

7.5 In view of the withdrawal of the opposition and this decision, the opposition division will however first have to decide under Rule 84(2) EPC whether it should still continue the opposition proceedings of its own motion (see T 1668/08 and Case Law of the Boards of Appeal, 10th edition 2022, III.Q.3.2).

Order

For these reasons it is decided that:

1. The contested decision is set aside.
2. The case is remitted to the opposition division for further prosecution.

The Registrar:

The Chairwoman:



U. Bultmann

C. Vassoille

Decision electronically authenticated