

**Internal distribution code:**

- (A) [ - ] Publication in OJ
- (B) [ - ] To Chairmen and Members
- (C) [ - ] To Chairmen
- (D) [ X ] No distribution

**Datasheet for the decision  
of 31 January 2022**

**Case Number:** T 1700/16 - 3.4.01

**Application Number:** 07118254.7

**Publication Number:** 2048914

**IPC:** H05B6/36, H05B6/12

**Language of the proceedings:** EN

**Title of invention:**

A cooking device having an induction heating element

**Patent Proprietor:**

LG Electronics Inc.

**Opponent:**

Electrolux Rothenburg GmbH Factory and Development

**Headword:**

Induction heating / LG Electronics

**Relevant legal provisions:**

EPC Art. 123(2), 123(3)  
RPBA 2020 Art. 13(1), 13(2)

**Keyword:**

Amendment to appeal case - main request, auxiliary requests 1, 1a, 2, 3, 4 - amendment gives rise to new objections (yes) - auxiliary request 14 - reformatio in peius (yes)  
Amendments - auxiliary requests 5 - 13 - extension beyond the content of the application as filed (yes) - auxiliary requests 5 - 13 - added subject-matter (yes)

**Decisions cited:**

G 0001/93, G 0001/12



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

Boards of Appeal of the  
European Patent Office  
Richard-Reitzner-Allee 8  
85540 Haar  
GERMANY  
Tel. +49 (0)89 2399-0  
Fax +49 (0)89 2399-4465

Case Number: T 1700/16 - 3.4.01

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.01**  
**of 31 January 2022**

**Appellant:** Electrolux Rothenburg GmbH Factory and  
(Opponent) Development  
Fürther Strasse 246  
90429 Nürnberg (DE)

**Representative:** Schröer, Gernot H.  
Meissner Bolte Patentanwälte  
Rechtsanwälte Partnerschaft mbB  
Bankgasse 3  
90402 Nürnberg (DE)

**Respondent:** LG Electronics Inc.  
(Patent Proprietor) 20, Yeouido-dong  
Yeongdeungpo-gu  
Seoul 150-721 (KR)

**Representative:** Ter Meer Steinmeister & Partner  
Patentanwälte mbB  
Nymphenburger Straße 4  
80335 München (DE)

**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
24 May 2016 concerning maintenance of the  
European Patent No. 2048914 in amended form.**

**Composition of the Board:**

**Chair** P. Scriven  
**Members:** T. Petelski  
C. Almberg

## **Summary of Facts and Submissions**

- I. The opposition against European Patent 2 048 914 was based on the grounds of lack of inventive step, and added subject-matter (Articles 100(a) and 100(c) EPC).
  
- II. In its decision, the opposition division found the main request to lack an inventive step, and the first and second auxiliary requests not to "comply with the requirements of Rule 80 EPC", because they "do not introduce any subject-matter that would allow the request to overcome the inventive step objection used against ... the main request". The third auxiliary request, on the other hand, fulfilled the requirements of the EPC.
  
- III. The opponent appealed and requested that the decision be set aside and the patent revoked. They argued that the patent as maintained by the opposition division extended the protection of the patent as granted, that it extended the subject-matter beyond the application as filed, and that it covered an invention which did not involve an inventive step.
  
- IV. The proprietor responded and requested that the patent be maintained on the basis of a new main request or one of eight new auxiliary requests. Maintenance of the patent as granted was a ninth auxiliary request.

- V. In response, the opponent requested that the main and auxiliary requests not be admitted and that the patent be revoked for lack of an admissible request. Conditionally, if issues in any of the auxiliary requests that were not discussed previously became relevant for the maintenance of the patent, the case should be remitted to the Opposition Division. In addition, the opponent argued that none of the requests was allowable for at least one of the reasons of added subject-matter, extension of protection, insufficient disclosure, lack of clarity, and lack of inventive step. The opponent also requested consideration of two new documents, E9 and E10.
- VI. In response, the proprietor argued that documents E9 and E10 should not be admitted. In reply, the opponent defended their admissibility.
- VII. A communication setting out the Board's preliminary opinion was sent with a summons to oral proceedings. According to this opinion, claim 1 of the the main request, and of all auxiliary requests, extended the protection of the patent and contained subject-matter that was not originally disclosed.
- VIII. The proprietor then filed a new main request and new auxiliary requests 1, 1a, 2, 3, and 4 on 10 February 2021, and stated that

*The newly filed requests as enclosed should be handled at first, whereas the order of the lower ranked new requests and also of the former requests (Main, Aux. 1 - Aux. 9)*

*should be discussed depending on the outcome of the discussion of the new main request. So, no one of the old pending requests is withdrawn.*

- IX. The main and auxiliary requests filed with the response to the appeal as bases for maintenance of the patent are relabelled as auxiliary requests 5 - 14. Nothing turns on the order in which they are considered.
- X. In a further response, the opponent requested that the new requests not be admitted because they could and should have been filed earlier, they lacked substantiation, they raised new issues, and they did not resolve the issues already raised against the previous requests. Hence, they were also not allowable. The opponent also invoked the prohibition of *reformatio in peius*. Postponement of oral proceedings or remittal to the first instance was requested, if amendments that included features associated with a "closed curve" or "semicircle" were admitted.
- XI. The requests underlying the current decision are, therefore, the main request and auxiliary requests 5 - 14 as filed with the response to the statement of grounds of appeal, and auxiliary requests 1, 1a, and 2 to 4, filed on 10 February 2021.
- XII. Claim 1 of the main request reads as follows. Reference signs are omitted and the features are labelled according to the scheme used in the notice of opposition and adopted by the Opposition Division and

both parties. Amendments with respect to the claims as granted are highlighted, and the labels of amended features include the letter "a".

M1.1 *An induction heater comprising:*

M1.2 *a base;*

M1.3 *a plurality of first solids of ferromagnetic or ferrimagnetic material,*

*the solids having a prescribed shape and being provided to have a prescribed arrangement on the base;*

*characterized in that the induction heater further comprises:*

M1.4a *a plurality of inductor coils ~~provided over at least portions of the plurality of solids,~~*

M1.5a *each inductor coil including a first coil having a plurality of wire windings, the first coil being provided over at least portions of the plurality of first solids, and a second coil provided in an inner side of the first coil and spaced apart from the first coil, the second coil crossing over at least portions of the plurality of first solids,*

M1.6a *wherein each first coil of a given inductor coil of the plurality includes is formed as a closed curve having two straight portions extending parallel to*

each other, and two curved portions which are formed respectively as a semicircle having the same diameter and connect both ends of the straight portions to each other, the first coils, respectively, formed as a closed curve having a symmetric center,

M1.7 wherein the first coils, which are adjacently arranged in order to sufficiently transfer an alternating or oscillating magnetic field to a space between the curved portions,

M1.8 are provided on the base symmetrically about a straight line between the first coils, and

M1.9a wherein the second coils are respectively disposed inside of the first coils such that ~~they have~~ each of the first coils has a circle center spaced apart from the symmetric point of the corresponding second coil.

XIII. Auxiliary request 1 adds, to M1.5a, the definition of the second coils "having a circular shape".

XIV. Auxiliary request 1a adds, to M1.9a of claim 1 of auxiliary request 1, the definition that

*... each of the second coils has a circle center spaced apart from the symmetric center of the corresponding first coil.*



- XV. Auxiliary request 2 differs from auxiliary request 1 in that M1.4a is amended to define "a two of inductor coils" [sic] instead of "a plurality of inductor coils".
- XVI. Claim 1 of auxiliary request 3 combines the amendments of auxiliary requests 1a and 2.
- XVII. Auxiliary request 4 adds, to claim 1 of auxiliary request 3, the subject-matter of dependent claims 2, 3, and 4, the content of which is not relevant for the present decision.
- XVIII. Claim 1 of auxiliary request 5 (filed as the main request with the response to the appeal) reads as follows. Amendments with respect to claim 1 as granted are marked, as above.

*M1.1 An induction heater comprising:*

*M1.2 a base;*

*M1.3 a plurality of first solids of ferromagnetic or ferrimagnetic material, the solids having a prescribed shape and being provided to have a prescribed arrangement on the base;*

*characterized in that the induction heater further comprises:*

M1.4 a plurality of inductor coils provided over at least portions of the plurality of solids,

M1.5 each inductor coil including a first coil having a plurality of wire windings, and a second coil provided in an inner side of the first coil and spaced apart from the first coil,

M1.6 wherein each first coil of a given inductor coil of the plurality includes two straight portions extending parallel to each other, and curved portions which connect both ends of the straight portions to each other, the first coils, respectively, formed as a closed curve having a symmetric center,

M1.7 wherein the first coils, which are adjacently arranged in order to sufficiently transfer an alternating or oscillating magnetic field to a space between the curved portions,

M1.8 are provided on the base symmetrically about a straight line between the first coils, and

M1.9\* wherein the second coils are respectively disposed inside of the first coils, ~~such that they have~~ wherein each second coil has a circle center spaced apart from the symmetric point of the ~~second~~ respective first coil.

XIX. Claim 1 of auxiliary request 6 differs from claim 1 of auxiliary request 5 in that it uses features M1.4a and M1.5a of the main request (except for a minor change in formulation), and in that the spacing in feature M1.9\* is defined to be "by a predetermined distance".

XX. Auxiliary requests 7 - 13 add, to claim 1 of auxiliary request 5, definitions of the shape and arrangement of the solids and the coils, which are of no relevance for the present decision.

XXI. Claim 1 of auxiliary request 14 is as granted. It differs from claim 1 of auxiliary request 5 only in its last feature:

*M1.9 ... wherein the second coils are respectively disposed inside of the first coils such that they have a circle center spaced apart from the symmetric point of the second coil.*

## **Reasons for the Decision**

### *Technical field*

1. The patent is about induction heating, such as can be used in a cooking stove. The heating is caused by an oscillating magnetic field that is generated by two pairs of coils. Two or three groups of solids of ferromagnetic or ferrimagnetic material are arranged below the coils, in such a way as to transfer a portion

of the magnetic field from each of the pairs of coils to a space between the two pairs.

*Main request and auxiliary requests 1, 1a, 3, 4 - Admission*

2. The main request and auxiliary requests 1, 1a, 2, 3, and 4 were filed after notification of a summons to oral proceedings. Hence, the consideration of these amendments to the appeal case is governed by Article 13(2) RPBA 2020, under which the criteria applicable under Article 13(1) RPBA 2020 also apply (see supplementary publication 2, OJ EPO 2020, 60; Table setting out the amendments to the RPBA and the explanatory remarks).
3. The requests are not admitted to the proceedings, because, *prima facie*, they each give rise to at least one new objection of added subject-matter, which is explained in the following.
4. Feature M1.9a in the main request and in auxiliary requests 1, 1a and 2 to 4 defines that  
  

*... each of the first coils has a circle center spaced apart from the symmetric point of the corresponding second coil.*
5. M1.9a is an attempt at defining the geometry of the coils as illustrated by Figure 2 of the patent, which much of the present case is about.

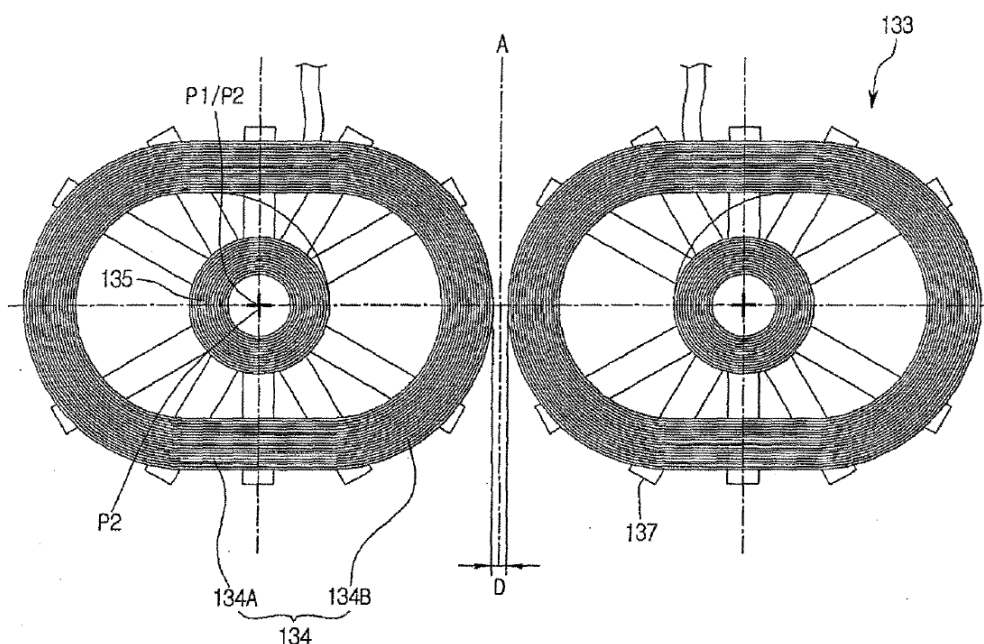


FIG.2

6. Figure 2 also helps to illustrate the meaning of M1.9a in the context of claim 1 of each of the main and auxiliary requests 1, 1a, and 2 to 4. According to these claims, each first (outer) coil (reference sign 134 in Figure 2) consists of two semicircular portions (134B) of the same diameter, connected by two straight portions (134A). Each of the two semicircular portions of the outer coil has a circle centre, which lies on the horizontal symmetry line to the left and to the right, respectively, of the outer coil's symmetric point (P1). The symmetric point of the corresponding second (inner) coil lies on the same symmetry line and is coincident with its circle centre, labelled P2 in Figure 2.
  
7. The single symmetric point of the inner coil cannot coincide with the two distinct circle centres of the outer coil. Therefore, the outer coils necessarily have "a circle center spaced apart from the symmetric point of the corresponding second coil". Under this purely

literal interpretation, advocated by the proprietor, the feature would be trivial and technically meaningless.

8. The skilled person would, however, not simply disregard a feature as trivial and useless, if it can also be understood in a technically meaningful manner. In this case, she would understand the drafter's intension to be that *each* circle centre of the first (outer) coil is spaced apart from the symmetric point of the second (inner) coil and would understand the claim accordingly.
9. The embodiment relating to Figure 2 is the only possible basis for such a disclosure. A central teaching of this embodiment is that the circle centre P2 of the inner coil coincides with the symmetric point P1 of the outer coil. The fact that the symmetric point of the inner coil cannot coincide with either of the two circle centres of the outer coil is a general consequence of this teaching. However, the skilled person would not have generalized the central teaching of the embodiment to one of its apparently irrelevant consequences.
10. In addition to Figure 2, the proprietor also cited Figure 3 (reproduced below) and Figure 4 as bases for the amendment.

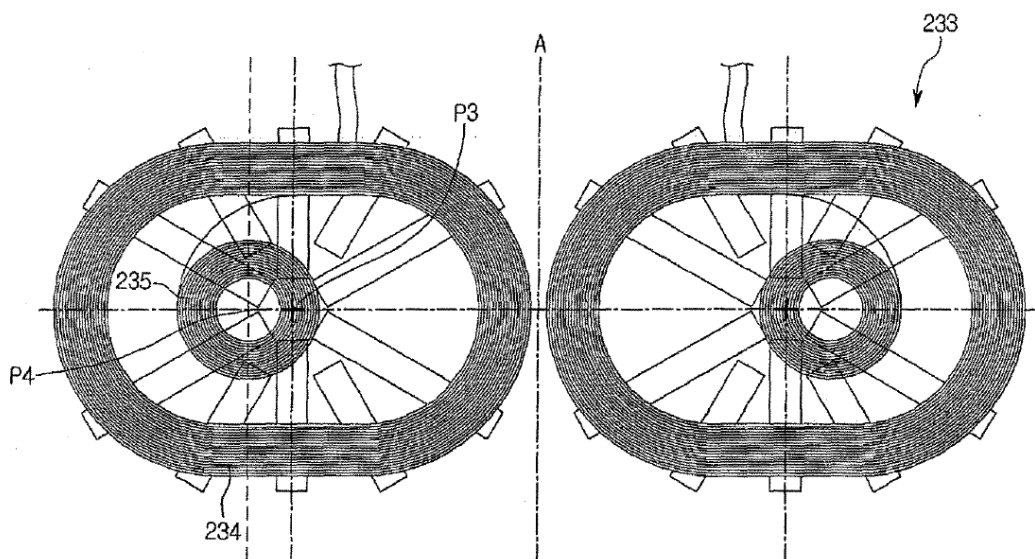


FIG.3

Both figures illustrate embodiments, in which the symmetric point of the *first* (outer) coil (P3 in Figure 3) is spaced apart from the circle centre of the corresponding *second* (inner) coil (P4 in Figure 3). This information is different from what is defined in claim 1. Deriving an exact relative position of the symmetric point of the inner coil with respect to the circle centres of the outer coil is not possible from these purely schematic figures.

11. Hence, *prima facie*, the subject-matter of claim 1 of each of the main request and auxiliary requests 1, 1a, 2, 3, and 4 contains subject-matter that was not originally disclosed (Article 123(2) EPC).
  
12. The proprietor's arguments in favour of admission in the light of Article 13(2) RPBA 2020 have no significance since, regardless of their persuasiveness, a criterion of Article 13(1) RPBA 2020 is applied to the detriment of admission.

*Auxiliary requests 5 to 13 - Added subject-matter*

13. Claim 1 of auxiliary requests 5 and 7 to 13 defines, in feature M1.4,

*... a plurality of inductor coils provided over at least portions of the plurality of solids, each inductor coil including a first coil ... , and a second coil ...*

14. Claim 1 of auxiliary request 6 instead uses the wording

*... a plurality of inductor coils, each inductor coil including a first coil provided over at least portions of the plurality of first solids ... , and a second coil crossing over at least portions of the plurality of first solids ...*

15. In both formulations, there are two pieces of added matter contained in this feature.

16. Firstly, the original application does not disclose a *plurality* of inductor coils, wherein each inductor coil includes a first and a second coil. This is in particular so for inductor coils of which the first coils are adjacently aligned and provided symmetrically about a straight line between the first coils (features M1.7 and M1.8).

17. The invention set out in the original application comprises, at most, two coils, each consisting of one outer and one inner coil. The only passages relating to more than two (pairs of) coils are in paragraphs [0038] - [0043]. However, the cookers described there do not fall within the scope of the claims. Hence, the skilled



person would not derive any teaching of the claimed invention from those paragraphs.

18. Secondly, and again in both formulations, feature M1.4 encompasses arrangements of the coils and the plurality of first solids, in which two or more (pairs of) coils are provided over (or crossing) the same solid or solids. There is no basis for such arrangements in the application as filed.
19. The original description teaches, in all the specific embodiments, only arrangements with two pairs of first and second coils provided over two respective groups of solids of different lengths that radially extend outwards from the centre of the first coils beyond the extension of the first coils. Optionally, there may be an additional, third group of mutually parallel solids arranged between those two groups. See paragraphs [0021], [0027], [0031], [0032], and [0034] - [0036] of the published application. These specific embodiments cannot form a valid basis for the contested feature.
20. The original claims, on the other hand, do not define more than the specific arrangements of a first and (optionally) second and third group of solids under two pairs of first and second coils.
21. The proprietor relies on paragraphs [0036] and [0041] of the published application as a basis for a plurality of coils. These paragraphs related to the whole invention.
22. However, these paragraphs do not form a valid basis for feature M1.4. Paragraph [0036] is the first paragraph following the detailed description of Figures 1 - 7. It summarizes common features of all previously-described

embodiments. It starts with "The inductor coils ...". This must, consequently, be understood as referring to the inductor coils of the previously described embodiments. All those embodiments have exactly two (pairs of) coils.

23. Paragraph [0041] is one in a series of six paragraphs that each describes a "cooker embodiment" in claim-like formulation. None of those cookers falls within the scope of claim 1 of auxiliary request 5 to 13, respectively. In particular, the cooker according to paragraph [0041] does not. In contrast to claim 1 of each of these requests, this cooker includes a plurality of ferrites that is not restricted in its arrangement with respect to the coils, and it includes inner coils that are "formed as a circle shape having the same circle center as a center point of the outer coil".
24. Hence, there is no basis in the application as filed for feature M1.4 in any of auxiliary requests 5 to 13.

*Auxiliary requests 5 to 13 - Extension of protection*

25. Feature M1.9, in the claim as granted, according to which (emphasis added)

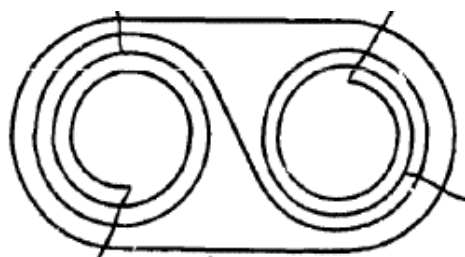
*... the second coils are respectively disposed inside the first coils such they have a circle center spaced apart from the symmetric point of the second coil...*

has been deleted in auxiliary requests 5 to 13. In its place, the feature M1.9\* has been added:

*... the second coils are respectively disposed inside the first coils, wherein each second coil has a circle center spaced apart from the symmetric point of the respective first coil...*

26. Claim 1 of auxiliary request 6 further adds "at a predetermined distance" to M1.9\*. The reasoning below applies to all requests 5 to 13, regardless of this addition.
27. The opponent alleges that the replacement of M1.9 by M1.9\* extended the scope of protection of claim 1. In order to examine if this is so, the technical meaning of M1.9 has to be determined and compared to that of M1.9\*.
28. The skilled person, reading the claim as granted, would consider several different interpretations of feature M1.9. The interpretations depend on whether the ambiguous pronoun *they* in "such that they have..." refers to (a) each of the second coils, (b) the set of second coils, (c) each of the first coils, (d) the set of first coils, (e) each pair of first and second coils, (f) each of the coils (whether first or second), or (g) the set of all coils (whether first or second). The ambiguous reference to *the second coil* in the formulation "the symmetry point of the second coil" must also be interpreted differently, depending on the interpretation of the pronoun *they*.
29. Some of the interpretations which the skilled person would consider are as follows:
  - (a) Each of the second coils has a circle centre spaced apart from the symmetric point of the (same) coil.

Having a non-coinciding circle centre and symmetric point implies that each second coil is not a complete circle, but comprises at least one section of a circle with a circle centre. This is possible, for example, if the second coils have figure-eight-shapes, if they have a shape like that illustrated in Figure 3 of document E8 (see the reproduction),



or if they consist of two parts lying in distinct planes, one stacked above the other. A further shape would be an oval shape similar to the first coil, including two semi-circles. In all those cases, each second coil would have one or more circle centres, spaced apart from its symmetric point.

- (b) The set of second coils has a circle centre (at least one) that is spaced apart from the symmetric point of either *one of* the second coils or *the set* of second coils. Both interpretations technically restrict the arrangement of the second coils.
  
- (c) Each of the first coils has a circle centre spaced apart from the symmetric point of the (corresponding) second coil. As explained in the context of the main request, the skilled person would understand this such that each of the two circle centres of the first coil is spaced apart from the symmetric point of the second coil.

30. All these interpretations make technical sense, in so far as the resulting magnetic field and the resulting induction will be arranged in a certain geometry. They would, therefore, be considered by the skilled person within the general technical frame of the invention.
31. It follows that feature M1.9 imposes a restriction on the arrangement of coils that is not imposed by feature M1.9\*.
32. Hence, the protection conferred by claim 1 is extended by the replacement of feature M1.9.
33. The question of whether the above interpretations are supported by the description is of no relevance for the issue at stake.
34. According to the proprietor, the skilled person would have understood that feature M1.9\* merely reflected what was actually intended by feature M1.9. In view of the patent as whole, feature M1.9 would have been interpreted in the sense of feature M1.9\*. The replacement of M1.9 by M1.9\*, therefore, did not extend the protection.
35. If, however, it were assumed that the skilled person would *not* understand feature M1.9 according to its intended meaning, then she would interpret it literally. Since the pronoun *they* referred to the second coils, M1.9 defined the second coils as having a circle centre. Therefore, they had to be circular. This was backed up by the description, which only showed circular second (inner) coils. In a circular coil, the symmetry centre coincided with its circle centre. As a consequence, in the proprietor's view, the definition that both centres were spaced apart was unclear and

contradictory to such a degree that, under a literal interpretation, feature M1.9 had no technical meaning and could not limit the claim.

36. Further according to the proprietor, the case law ruled out illogical interpretations of a claim and those that did not make technical sense. Hence, feature M1.9 could be deleted from the claim, in line with the teaching of G 1/93 *Limiting Feature*, OJ EPC 1994, 541, without extending the scope of the claim. This was the line of argumentation the Opposition Division had followed.
37. Considering the circumstances of this amendment, it cannot be ruled out that the proprietor is right when suggesting that feature M1.9\* merely reflected what was actually intended when feature M1.9 was introduced during examination proceedings. The intended meaning might, indeed, have been that the circle centre of each *second* (inner) coil being spaced apart from the symmetric centre of the respective *first* (not second), outer coil.
38. However, this is not what the claim says. It is also not what the skilled person would understand from the claim.
39. The proprietor correctly states that a claim needs to be read with a mind willing to understand. This means that a serious effort needs to be made to interpret the meaning of each feature of a claim, before simply disregarding it. If necessary, this includes interpretations assuming that the claim wording is imprecise in grammar or in the choice of terms. It would not be a realistic approach to insist on the pure literal wording and to disregard every feature that required interpretation.

40. It has been shown above that there is a number of different ways of understanding the feature M1.9 in a technically meaningful manner. All of these understandings are different from M1.9\*.

*Further observation on features M1.9 and M1.9\**

41. In their letter dated 2 February 2015, filed during opposition proceedings, the proprietor claimed to have made an obvious mistake when introducing feature M1.9. It was clear from the description, in particular from paragraphs [0028] and [0029] of the A1-publication, that the intended meaning of feature M1.9 was that of M1.9\*.
42. However, the proprietor did not request the correction of an obvious mistake under Rule 139 EPC. Such a request would have had to be filed, without delay, during opposition proceedings (see G 1/12, OJ EPO 2014, 114, point 37(d) of the reasons). Such a request, however, could not change the outcome of the above evaluation. For a correction concerning the claims to be allowable, it must be obvious in the sense that it is immediately evident that nothing else could have been intended than what is offered as the correction.
43. From the patent itself, including said multitude of possible technical interpretations of feature M1.9, it is not obvious that feature M1.9 was a mistake and that feature M1.9\* is exactly the intended meaning. Nor does feature M1.9\* seem to be directly and unambiguously derivable from the application as filed, as required under Article 123(2) EPC (Case Law, 9th ed., II.E.4.1 and 4.2). In fact, the proprietor themselves suggested a different correction in the first auxiliary request

as filed on 9 March 2016, changing from "the symmetric point of the second coil" to "the symmetric point of the second coils".

*Auxiliary request 14 - Admission*

44. Auxiliary request 14 is that the patent be maintained as granted.
45. The opposition division decided that the patent could be maintained in amended form, with a new feature M1.9\*, which is not disclosed by the claims as granted (see above).
46. The proprietor did not file an appeal, and so does not contest the maintenance of the patent in the form the opposition division found allowable.
47. Returning to the claims as granted would put the sole appellant, the opponent, in a position that would be worse than if they had not appealed. This would neither be appropriate nor necessary, and the opponent is right in invoking (under point M on the last page of the response to the proprietor's reply to the appeal) the prohibition of *reformatio in peius* (Case Law, 9th edition, V.A.3.1, in particular V.A.3.1.6).
48. Therefore, auxiliary request 14 is not admitted to the proceedings.

*Conclusion*

49. The main request and auxiliary requests 1, 1a, and 2 to 4 are not admitted into the proceedings under Article



13(1) and (2) RPBA 2020, because they give rise to new objections of subject-matter which extends beyond the application as filed (Article 123(2) EPC).

50. Auxiliary requests 5 - 13 are not allowable because they contain subject-matter which extends beyond the application as filed (Article 123(2) EPC), and which extends the protection conferred by the patent as granted (Article 123(3) EPC).
  
51. Auxiliary request 14 is not admitted to the proceedings in view of the prohibition of *reformatio in peius* (Case Law, 9th edition, V.A.3.1, in particular V.A.3.1.6).

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chair:



D. Meyfarth

P. Scriven

Decision electronically authenticated