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**Datasheet for the decision  
of 9 September 2022**

**Case Number:** T 0690/18 - 3.4.01

**Application Number:** 09168151.0

**Publication Number:** 2164298

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

**Language of the proceedings:** EN

**Title of invention:**

Electric induction oven

**Patent Proprietor:**

WHIRLPOOL CORPORATION

**Opponent:**

BSH Hausgeräte GmbH

**Headword:**

Electric induction oven / Whirlpool Corp.

**Relevant legal provisions:**

EPC Art. 123(2), 54, 56

RPBA 2020 Art. 13(1), 13(2)

**Keyword:**

Amendments - allowable (yes)

Inventive step - effect not made credible

Late-filed auxiliary requests - admitted (no) - request  
clearly allowable (no)

**Decisions cited:**

T 0752/16



**Beschwerdekammern**

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Case Number: T 0690/18 - 3.4.01

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.01**  
**of 9 September 2022**

**Appellant:** WHIRLPOOL CORPORATION  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
18 January 2018 concerning maintenance of the  
European Patent No. 2164298 in amended form.**

**Composition of the Board:**

**Chairman** T. Zinke  
**Members:** P. Fontenay  
C. Almberg

## Summary of Facts and Submissions

- I. The appeals, by the proprietor and by the opponent, are against the interlocutory decision of the Opposition Division finding European patent 2 164 298 allowable in an amended form.
- II. The opposition filed by the opponent relied on the grounds of lack of novelty and lack of an inventive step (Article 100(a) EPC), and added subject-matter (Article 100(c) EPC).
- III. In their decision, the Opposition Division held that the subject-matter of claim 1 of the main request (i.e. of the patent as granted) did not extend beyond the content of the application as filed. They however concluded that the claimed subject-matter was not new in view of document

D2: JP-06-18044.

Relying on *prima facie* considerations, the Opposition Division decided not to admit a "first additional" and "second additional" auxiliary request. The Opposition Division however held that the "first" auxiliary request on file was allowable. Its subject-matter was considered to be inventive starting from document D2, considered as closest prior art, and in view of

D1: GB-A-2 446 347,  
D13: DE-A-198 45 844, or  
D14: DE-A-10 2005 056 501.

The same conclusion applied starting from documents D1,

D5: DE-A-198 52 617, or

D9: DE-A-101 60 087, as closest prior art.

- IV. The parties were summoned to oral proceedings in accordance with their respective requests.
- V. In a communication setting out its provisional opinion under Articles 15(1) and 17(2) RPBA 2020, the Board indicated that it was minded to uphold the decision of the Opposition Division with regard to the main request, i.e. to hold it unallowable for lack of novelty over D2, or, further, at least for lack of an inventive step starting from D5.

Moreover, the Board questioned the obviousness of the invention claimed by the first auxiliary request (i.e. as found allowable by the Opposition Division) whether starting from D2 or D5, and combined with D13 or D4.

- VI. Both parties were represented at the oral proceedings.
- VII. Their final requests were as follows.

The proprietor requested that the impugned decision be set aside, and that the patent be maintained as granted (main request).

Subsidiarily, it requested that the opponent's appeal be dismissed (i.e. that the patent be maintained as

amended based on auxiliary request 1 subject of the appealed decision).

Further subsidiarily, it requested that the patent be maintained as amended based on auxiliary request 2 filed during the oral proceedings.

The opponent requested that the appealed decision be set aside, and that the patent be revoked, or that the case be remitted to the Opposition Division.

Subsidiarily, it requested that the proprietor's appeal be dismissed.

VIII. In the course of the oral proceedings, the parties made procedural requests as follows.

The opponent requested that auxiliary request 1 be disregarded.

The proprietor requested that the opponent's novelty attack on auxiliary request 1 in view of D1 be disregarded.

The opponent objected to the admissibility of auxiliary request 2.

IX. Claim 1 of the proprietor's main request (patent as granted) reads:

*An electric oven comprising a box casing (1) presenting side walls (2, 3), a rear wall (4), an upper wall (5) and a lower wall (6), an opening (8) and a closure door for this latter, said walls (2,*

3, 4, 5, 6) bounding and defining an oven cavity (9) heated by heating means functionally associated with at least one of said walls (2, 3, 4, 5, 6), said heating means being arranged to heat said cavity by induction, said heating means comprising generator means (16) arranged to generate an electromagnetic field, electrically insulating means (17) being disposed between said generator means (16) and that oven wall at which the heating means are positioned, characterised in that magnetically insulating means (15) are disposed on the outside of the oven with reference to said wall, said generator means (16), the electrically insulating means (17) and the magnetically insulating means (15) are connected together to form a single layered structure (20) applicable to said oven wall.

Claim 1 of the proprietor's auxiliary request 1 (patent as amended, and as found allowable by the Opposition Division) reads:

An electric oven comprising a box casing (1) presenting side walls (2, 3), a rear wall (4), an upper wall (5) and a lower wall (6), an opening (8) and a closure door for this latter, said walls (2, 3, 4, 5, 6) bounding and defining an oven cavity (9) heated by heating means functionally associated with at least one of said walls (2, 3, 4, 5, 6), said heating means are arranged to heat said cavity by induction, said heating means comprising generator means (16) arranged to generate an electromagnetic field, electrically insulating means (17) disposed between said generator means (16) and that oven wall at which the heating means are positioned, magnetically insulating means (15)

*disposed on the outside of the oven with reference to said wall, said generator means (16), the electrically insulating means (17) and the magnetically insulating means (15) are connected together to form a single layered structure (20) applicable to said oven wall, characterised in that said layered structure (20) comprises thermally insulating means (28) present between said generator means (16) and said magnetically insulating means (15).*

Claim 1 of auxiliary request 1 differs thus from claim 1 of the main request, essentially, in that it is

*characterised in that said layered structure (20) comprises thermally insulating means (28) present between said generator means (16) and said magnetically insulating means (15).*

Claim 1 according to auxiliary request 2 differs from claim 1 of auxiliary request 1 in that it contains the further limitations according to which:

*said thermally insulating means are a panel (28) of insulating material,  
said panel (28) of thermally insulating material is spaced from said generator means (16) to hence define an air interspace between the latter and said panel (28).*



## **Reasons for the Decision**

*Main request- added subject-matter (Article 100(c) EPC)*

1. The amended wording in granted claim 1 according to which "said generator means, the electrically insulating means and the magnetically insulating means are connected together to form a single layered structure" is equivalent to the wording in original claim 1 that reads: "said generator means, the electrically insulating means and the magnetically insulating means defining a single layered structure...".
2. The ambiguity underlined by the opponent, according to which the amended wording would imply a layered structure where the various bounded layers would still be recognisable as such, whereas the original wording implied a single layer, was already present in original claim 1. Contrary to the opponent's view, the indication in original claim 1 that the generator means, the electrically insulating means and the magnetically insulating means define a single layered structure does not necessarily imply that the resulting layer is made of one single layer in the sense of a single homogenous layer providing the three recited functionalities.
3. Moreover, literal support for the objected wording may be found in the last sentence of paragraph [0010] of the application as published.
4. Therefore, the subject-matter of claim 1 does not define added subject-matter (Article 100(c) EPC).

*Main request - novelty (Article 54 EPC).*

5. Reference is made in the following sections to a translation of document D2 as provided by the proprietor in the course of the opposition proceedings. Said replacement translation differs from the translation initially provided by the opponent. The validity and content of the replacement translation were not disputed.
6. Document D2 discloses an electric oven comprising a box casing with side, rear, upper and lower walls defining a cavity and an opening that can be closed by a closure door (Figure 1). In D2, the walls defining the cavity are heated by heating means functionally associated with at least one of said walls (paragraph [0020], lines 5-10).
7. D2 further discloses on the upper surface of the oven wall 5, a high-frequency magnetic field generating means 50 composed of a flat plate induction heating coil, or the like, disposed via a heat insulating member 13 substantially in parallel with the oven wall 5 (paragraph [0020], lines 3-5). The high frequency magnetic field generating means 50 induces a high frequency current on the top surface of the oven wall 5. Therefore, the upper surface of the oven wall 5 is directly heated by the high-frequency current, and the food in the oven can be radiantly heated. A shielding means 51 made of a ferrite, an aluminium plate or a combination thereof is further disposed on the upper portion of the high frequency magnetic field generating means 50 (paragraph [0020], lines 10-12).
8. The proprietor objected to the finding that the feature of the electrically insulating means being disposed

between said generator means and the oven wall at which the heating means are positioned is disclosed in D2.

9. The Board acknowledges that a thermal insulator is not necessarily an electrical insulator. According to the embodiment of Figure 1 in D2, thermal insulator 13 is positioned directly between the heating means 50 and the oven wall thus differing from the construction illustrated in Figure 11, referred to by the proprietor in the statement of grounds of appeal. It follows that the thermal insulator 13 is, in the context of Figure 1, necessarily electrically isolating, since otherwise the resulting short cut would prevent the coil from operating.
10. The Opposition Division held that the feature according to which the generator means, the electrically insulating means and the magnetically insulating means are connected together to form a single layered structure applicable to said oven wall, was implicitly disclosed in D2. This assessment relied on the observation that the layers of the structure disclosed in Figure 1 of D2 were implicitly connected together. The need for such connection resulted from the need for the layers to be kept in place when the oven is moved.
11. This is contested by the proprietor, which, in particular, stresses that there is no direct and unambiguous indication in D2 that the oven is to be moved.
12. This argument is not persuasive. Practical considerations imply that the various components of the upper wall in Figure 1 of D2 are connected. An oven is expected to be displaced between various locations after it has been manufactured. It is common that such

items are first stored in storehouses at the manufacturing site before being moved to selling surfaces. An oven is also expected to be moved in private households according to a user's needs or preferences.

13. During the oral proceedings, the proprietor stressed that the mere fact that the layers were held in place did not imply that they were connected together to form a single layered structure applicable to said oven wall. In the proprietor's view, the claim's wording made it clear what was actually implied by the notion of single layered structure. This was confirmed by the description which stressed that such a layer made it easy to handle and to fit to the oven wall (paragraphs [0012], [0020] of the patent specification).
14. The proprietor's arguments do not persuade the Board which emphasises that the claim is directed to a device and that the recited features have to be construed in terms of structure or functions of the claimed device. The reference to a layer being applicable to the oven wall refers, however, primarily to a manufacturing step. Interpreted in the light of the claimed oven, it merely implies that a single layered structure is applied to the oven wall. The view that said structure existed as an integral part before manufacturing the oven, as underlined in the description, extends beyond what may actually be derived from the claim's wording.
15. The reference to shielding means being disposed on the upper portion of the magnetic field, generating means combined with the indication that said induction coil is disposed via a heat insulating member in parallel to the oven wall, imply that the resulting structure defines a single sandwich or layered structure.

16. It follows that the claimed subject-matter is not new in the sense of Article 54 EPC considering document D2.

*Auxiliary request 1 - admissibility*

17. The opponent requests that auxiliary request 1 be disregarded. In other words, it objects to the admissibility of auxiliary request 1, i.e. of the dismissal of the opponent's appeal subsidiarily sought by the proprietor. The opponent argues, that in the absence of any explicit reference to said request in the proprietor's appeal, its first appearance in the appeal proceedings was with the reply to the Board's communication. Thus, auxiliary request 1 was late filed.
18. Under the circumstances, including that the statement of grounds of appeal did not contain any assertion suggesting otherwise, the proprietor's request for maintenance of the patent as granted should be interpreted as including an implied, fallback request for the status quo, i.e. for maintenance based on auxiliary request 1 as intended by the Opposition Division. It cannot be presumed that, in the event the proprietor would have failed to achieve the desired maintenance of the patent as granted, it would have accepted losing the patent altogether.
19. Therefore, the facts that the proprietor never replied to the opponent's statement of grounds of appeal, and that it expressly defended auxiliary request 1 only in its reply to the communication of the Board, should not prevent this request from being considered.

20. In the Board's view, auxiliary request 1 is in the appeal proceedings and thus to be taken into account (Article 12(4) RPBA 2007).

*Auxiliary request 1 - novelty (Article 54 EPC)*

21. The proprietor objected to the admissibility of the objection raised by the opponent on the basis of document D1. It stressed in this regard that the objection which had been raised in the notice of opposition against claim 2 as granted had been dropped later on as it was not maintained. Reference was made in this respect to point 2.7.1 of the impugned decision (page 8, fifth paragraph) according to which the opponent did not contest the novelty of the first auxiliary request and to point 2.7.2 (page 9, second paragraph) which elaborates on the objection of lack of an inventive step starting from D1.
22. Contrary to the proprietor's view, the Board cannot identify any explicit statement in the file that the objection raised initially against claim 2 as granted (section II.2, page 24 of the notice of opposition) was withdrawn. The statements referred to by the proprietor have to be construed in view of the decision of the Opposition Division regarding claim 1 as granted the subject-matter of which was considered new (points 2.7 and 2.7.1, first paragraph, text bridging pages 7 and 8; see also minutes from the first oral proceedings before the Opposition Division, point 1, page 1, and points 5.1 and 5.3, page 10). In this context, the opponent's statement was reasonably merely acknowledging that the opponent did not see any hope in reiterating the objection against the then pending auxiliary request 1, which, in addition to claim 1 as

granted already found novel, further incorporated the features of granted claim 2.

23. In the absence of clear evidence that the objection was abandoned it should be regarded as forming part of the appeal proceedings (Article 12(4) RPBA).
24. On substance, the Board fails to recognise in D1 the feature of the oven cavity being "heated by heating means functionally associated with at least one of said walls" as recited in claim 1. The wording of the claim implies, in the context of the invention, that the functional relationship which exists between the heating means and the at least one of said walls relates to the heating process. A mere holding function is thus excluded by the recited wording. D1 does not suggest any inductive heating of the wall. The wording also excludes an indirect heating via the container present in the oven cavity.
25. As a result, the claimed subject-matter of auxiliary request 1 is novel over D1.

*Auxiliary request 1 - inventive step (Article 56 EPC)*

26. Claim 1 of the auxiliary request 1 differs from claim 1 of the patent as granted in that it incorporates the feature defining the characterising portion of claim 1 according to which:

*said layered structure (20) comprises thermally insulating means (28) present between said generator means (16) and said magnetically insulating means (15).*

27. D2 was regarded as the closest prior art by the Opposition Division. It reproduces all the features of the preamble of claim 1 and differs thus from the claimed subject-matter only in that it fails to disclose the characterising feature.
28. The opposition division held that there was no reason, starting from document D2, to change the position of the thermal insulator. The reasoning developed by the Opposition Division based on this assumption is persuasive. A change of position of the thermal insulator in the context of D2 would deprive the oven of the electrical insulator between the induction coil and the oven wall thus *de facto* impeding any proper functioning of the generator means.
29. However, there appears to be no need for the thermally insulating means to be displaced, as assumed by the Opposition Division, in order to arrive at the claimed subject-matter. The claimed subject-matter may also be considered to be distinguished from the oven according to Figure 1 of D2 in that it additionally comprises a thermally insulating layer separating the induction coil and the magnetically insulating means.
30. Contrary to the initial view developed by the Board in the provisional opinion, the introduction of said additional thermally insulating layer does not solve any technical problem.
31. In the context of D2, the provision of an additional thermally insulating layer between the induction coil and the magnetic insulating material does not provide any technical contribution in terms of a technical effect over the embodiment of Figure 1 in D2.



32. This was contested by the proprietor. Paragraph [0018] in the patent specification explicitly refers to the need to protect the panel of ferrite (the magnetically insulating means) whose magnetic insulating properties decrease as its temperature increases. A thermally insulating layer separating the generator coil from the ferrite layer limits the flow of energy between both entities, thus limiting the temperature increase of the ferrite layer.
  
33. This argument is not persuasive. In the context of D2, said effect is achieved by the thermally insulating layer present between the generator means (induction coil) and the oven wall. The technical effect relied upon by the proprietor of limiting the heat transfer toward the magnetically insulating means is thus achieved by this known configuration. It cannot define a contribution to said prior art. The Board has no doubts that the thermally insulating material and its thickness in D2 are selected so as to guarantee a proper repeated functioning of the whole system thus ensuring that neither the coil generator nor the magnetically insulating layer be damaged.
  
34. According to an alternative line of argumentation elaborated by the proprietor in the course of the proceedings, the distinguishing feature allows a reduction of the thickness of the first thermally insulating layer between the generator means and the oven wall. It thus contributes to a reduction of the distance between the generator means and the oven wall and thus to a better electromagnetic coupling of both entities. All in all, it contributes to improving the efficiency of the heating process.

35. However, the effect relied upon by the proprietor is not disclosed in the patent specification. The Board further considers that the skilled person would not have been in a position, on the basis of common general knowledge, to derive it from said teaching. This appears all the more true considering that the magnetic coupling between the induction coil and the oven wall depend, first, on the respective geometries of the induction coil and the oven wall and, second, on the magnetic properties of said wall: aspects which are not addressed in the patent specification.
36. In the absence of any indications that the distance separating the generator means from the oven wall might have played a role in the context of the claimed invention, the Board sees no basis for the technical effect relied upon by the proprietor.
37. As a consequence, and in the absence of a resulting problem to be solved, the claimed subject-matter defines an arbitrary modification of the oven according to D2. It is thus not inventive in the sense of Article 56 EPC.

*Auxiliary request 2 - admissibility*

38. Auxiliary request 2 was filed during the oral proceedings before the Board, that is at a particularly late stage of the appeal proceedings. The admissibility of auxiliary request 2 is to be assessed according to the criteria of Article 13(1) and (2) RPBA 2020.
39. In contrast to the approach developed in the appealed decision, the provisional opinion issued by the Board envisaged an alternative scenario as to how to arrive

at the claimed subject-matter starting from the embodiment of Figure 1 in D2. Instead of displacing the thermally insulating layer, the Board stressed that the introduction of an additional thermally insulating layer between the induction coil and the ferrite layer would have led to the claimed subject-matter. Such a modification was considered then to solve the problem of protecting the magnetically insulating means from the effects of excessive heat.

40. In the course of the oral proceedings before the Board, the proprietor was confronted with a revised provisional analysis of D2 from the Board according to which the claimed invention did not solve any technical problem due to the absence of a technical effect.
41. The proprietor stressed that the discussion of auxiliary request 1 and, in particular, the finding that the claimed invention did not provide any technical effect going beyond what was achieved by the oven in D2, constituted an unexpected turn of events in view of the Board's provisional opinion. This constituted exceptional circumstances which justified admission of said late request into the appeal proceedings under Article 13(2) RPBA 2020.
42. The proprietor's arguments are not persuasive.
43. Firstly, inventive step attacks against claim 1 of auxiliary request 1 starting from D2 were subject to the appealed decision. The first objection therein relied on D2 and common general knowledge. By the end of the corresponding section of its statement of grounds of appeal (pages 16-18), the opponent, in a summary of its D2-based inventive step attacks, stressed that D2 was also put forward as a sole

document: "Zusammenfassend ist der Patentanspruch 1 des ersten Hilfsantrags nicht erfinderisch ausgehend von der Druckschrift D2, insbesondere auch unter zusätzlicher Betrachtung der Druckschriften D13 oder D14."). The merits of D2 was not a new issue.

44. Secondly, the Board is not bound in any manner by the content of its provisional opinion (Article 17(2) RPBA 2020). The first paragraph of the Board's communication contained a reminder to that effect.
45. The circumstances referred to by the proprietor do not constitute exceptional circumstances, but relate, on the contrary, to ordinary aspects of the appeal proceedings. For there is nothing exceptional in the Board, as a result of a preparatory meeting or as a result of arguments presented during the oral proceedings, assessing a situation differently from its provisional opinion, thus diverging from or revising its provisional analysis. On the contrary, it belongs to the very essence of oral proceedings that the exchange of views may lead to a different assessment of the issues to be addressed (cf. T 752/16, reason 3.4).
46. Moreover, the amendments introduced in claim 1 of auxiliary request 2 do not *prima facie* overcome the issue of lack of technical effect raised against claim 1 of auxiliary request 1. The additional limitations, that the thermally insulating means are a panel of insulating material, and that said panel of thermally insulating material is spaced from said generator means to thus define an air interspace between the latter and said panel, refer to structural aspects of the thermally insulating layer. They are without any bearing on the above finding that said thermally insulating layer does not provide any additional

technical effect over the thermally insulating layer present between the induction coil and oven wall in D2.

47. For these reasons, auxiliary request 2 was not admitted into the appeal proceedings (Article 13(1) and (2) RPBA 2020).

## 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

T. Zinke

Decision electronically authenticated