Internal distribution code:

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

Datasheet for the decision of 15 April 2025

Case Number: T 0773/23 - 3.4.01

Application Number: 20150185.5

Publication Number: 3726929

IPC: H05B6/06, H05B6/12

Language of the proceedings: EN

Title of invention:
INDUCTION HEATING DEVICE HAVING IMPROVED USER EXPERIENCE AND USER INTERFACE

Patent Proprietor:
LG Electronics Inc.

Opponent:
BSH Hausgeräte GmbH

Headword:
Induction device / LG Electronics

Relevant legal provisions:
EPC Art. 54, 56

Keyword:

Decisions cited:
G 0007/93, T 0528/07, T 0491/09

Europäisches Patentamt
European Patent Office
Office européen des brevets

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

Case Number: T 0773/23 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 15 April 2025

Appellant: (Patent Proprietor)	LG Electronics Inc. 128, Yeouidaero, Yeongdeungpogu SEOUL, 07336 (KR)
Representative:	Vossius & Partner Patentanwälte Rechtsanwälte mbB Siebertstrasse 3 81675 München (DE)
Appellant: (Opponent)	BSH Hausgeräte GmbH Carl-Wery-Strasse 34 81739 München (DE)
Representative:	BSH Hausgeräte GmbH Global Development Intellectual Property Postfach 830101 81701 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 6 March 2023 concerning maintenance of the European Patent No. 3726929 in amended form.**

Composition of the Board:

Chairman	P. Scriven
Members:	P. Fontenay
	D. Rogers

Summary of Facts and Submissions

I. An opposition was filed to the European patent. It relied on grounds under Article 100(c) EPC, and Article 100(a) EPC in conjunction with Articles 54 or 56 EPC.

II. Both the proprietor and the opponent appealed the Opposition Division's interlocutory decision, finding the European patent allowable in an amended form, on the basis of auxiliary request 2.

III. The proprietor's initial substantive requests were that the decision under appeal be set aside and the opposition rejected (main request). As an auxiliary measure, the proprietor requested that the decision under appeal be set aside and the patent maintained on the basis of auxiliary request 1; or that the opponent's appeal be dismissed (so that the patent would be maintained on the basis of auxiliary request 2). Auxiliary request 1 was same as underlay the impugned decision.

IV. The initial substantive requests of the opponent were that the appeal of the proprietor be dismissed, and that the decision under appeal be set aside and the patent revoked.

V. In their decision, the Opposition Division concluded that claim 1 of auxiliary request 2, filed during oral

proceedings before them, was inventive over a combination of document

D6: WO-A-2016/067861,
(in English translation, D6a)

with

D11: JP-A-2014-116088, or
D1: DE-T5-11 2013 004 163

and one of documents

D7: DE-A-10 2012 205 100, or
D8: WO-A-2006/072388.

VI. The parties were summoned to oral proceedings, in accordance with their respective requests.

VII. In a communication setting out its provisional opinion under Articles 15(1) and 17(2) RPBA 2020, the Board indicated that it shared the opinion of the Opposition Division regarding added subject-matter with regard to the main request, and did not identify any inventive contribution in the subject-matter of claim 1 of the first and second auxiliary requests. It was underlined, in this respect, that the Board intended to confirm the Opposition Division's decision to admit document D11 into the proceedings.

VIII. Both parties were represented at the oral proceedings.

IX. During oral proceedings and after the Board had conveyed its conclusions on all requests, the proprietor withdrew their appeal. Thus, the proprietor's final request was that the opponent's appeal be dismissed. In consequence of this, only auxiliary request 2 will be considered in this decision.

X. With regard to claim 1 of auxiliary request 2, the opponent's argument, according to which the functionality corresponding to feature M9.2 in claim 1 (see below for the claim definition) was also disclosed in document D11 and that its incorporation in the induction device of D6 (which made reference to D11) led to the claimed subject-matter, was first raised at the oral proceedings before the Board. The Board did not admit it into proceedings (see point 31 of the "Reasons").

XI. The opponent's final requests were that the decision under appeal be set aside and the patent revoked.

XII. Claim 1 of auxiliary request 2, found allowable by the Opposition Division, reads (with the feature numbering added by the Board, combining the references used by the proprietor with regard to claims 1 and 9 of the patent):

M1.1 An induction heating device,
comprising:
M1.2 a case (125) that defines a cook zone;

M1.3 a plurality of working coils (wab) that are disposed in the cook zone;
M1.4 a cover plate (119) that is coupled to an upper end of the case (125) and configured to seat an object (HT) to be heated on an upper surface of the cover plate (119);
M1.5 an input interface (300) that is flush with the upper surface of the cover plate (119), that is configured to receive touch input from a user, and that is configured to display one or more images;
M1.6 a first control module (310) configured to detect one or more of the plurality of working coils (wab) that are disposed at a location corresponding to a position of the object (HT) seated on the upper surface of the cover plate (119);
M1.7 a second control module (320) configured to receive information on the position of the object from the first control module (310) and to control the input interface to display an image of a heating zone for the object based on the information on the position of the object (HT); and
M1.8 a plurality of light emitting elements (177) that are configured to be controlled by the second control module (320), and that are disposed vertically below a periphery of each of the plurality of working coils (wab),
M1.9 wherein the second control module (320) is configured to:
analyze an arrangement form of the one or more of the plurality of working coils (wab)

based on the information on the position of the object (HT), and
M1.10 control driving of at least one of the plurality of light emitting elements (177) based on a result of analyzing the arrangement form,
M1.11 wherein the second control module (320) is configured to, based on the position of the object (HT) being detected, control the input interface (300) to display an image of the heating zone for the object (HT) and a power image (PI),
M1.12 where the image of the heating zone for the object (HT) is displayed in an area of the input interface (300) corresponding to the position of the object (HT) on the cover plate (119),
M1.13 and a power image (PI) being displayed at a central region of the image of the heating zone for the object (HT),
M1.14 wherein the input interface (300) is configured to, based on the touch input being received on the power image (PI), provide the second control module (320) with the touch input,
M1.15 and wherein the second control module (320) is configured to, based on the touch input received from the input interface (300), control the input interface (300) to display at least one of an image indicating a heating intensity or a timer image further comprising:
M9.1 a plurality of light guides (210) disposed around each of the plurality of working coils (wab)

M9.2 and configured to indicate a heating intensity of each of the plurality of working coils (wab) and whether each of the plurality of working coils (wab) is driven,
M9.3 wherein the plurality of light emitting elements (177) are disposed vertically below each of the plurality of light guides (210).

Reasons for the Decision

Novelty of auxiliary request 2

1. Document D6 discloses an induction heating device with a case that defines a cooking zone, a plurality of working coils that are disposed in the cooking zone, and a cover plate that is coupled to an upper end of the case and configured to seat an object to be heated on its upper surface (D6 figures 1 and 3-7; D6a paragraphs [0001], [0006], [0007], [0009], [0011], [0013]). The induction heating device of D6 further comprises an input interface that is flush with the upper surface of the cover plate. It is configured to receive touch input from a user, and to display one or more images (D6, figures 1, 7 and 8; D6a paragraphs [0008], [0010], [0012], [0032], [0035], [0036]). A first control module configured to detect one or more of the plurality of working coils that are disposed at a location corresponding to a position of the object seated on the upper surface of the cover plate is provided (D6a paragraphs [0031], [0086], [0107]). A second control module, configured to receive information on the position of the object from the first control module and to control the input interface

to display an image of a heating zone for the object based on the information on the position of the object, is also provided in the heating device disclosed in D6 (D6a paragraph [0070]).

2. This reflects features M1.1 to M1.7 of claim 1. It is, in particular, noted that the notions of first and second modules, in the context of the invention, encompasses different functionalities carried out by one single processor (paragraph [0197] of the patent).

3. Contrary to the opponent's view, the Board finds that the feature relating to a plurality of light emitting elements, configured to be controlled by the second control module and disposed vertically below a periphery of each of the plurality of working coils (feature M1.8), is missing from document D6.

4. The indication, in the first lines of paragraph [0205] in D6a, regarding the use of light emitting diodes with light guides for visual detection of the heating zone does not provide further detail on the corresponding arrangement. It is not sufficient to anticipate the specified configuration of feature M1.8.

5. Details of such a configuration are known from D11 (figures 5-8), which is a document referred to, in paragraph [0205] of D6a, as an example of how a user is notified of the heating zone by means of an arrangement combining light guides and light sources. However, the citation of D11 is not accompanied by any clear indication that it is the one to be used in the context of D6. The statement in paragraph [0205] does not go beyond indicating that D11 provides an example of what is possible.

6. Since D6 does not explicitly indicate that D11 forms part of its disclosure, the Board agrees with the Opposition Division's view that D6 does not disclose feature M1.8.

7. The step of analysing an arrangement of the heating coils, recited in feature M1.9, has a broad meaning and does not imply any of the specific compensation of the various embodiments of the invention. From paragraphs [0285] and [0289] in D6a, features M1.9 and M1.10 are known from D6.

8. The term "power image" has no recognised meaning in the field of induction hobs. The Board thus adopts a broad interpretation of this term as used in the method steps defined in features M1.11 to 1.15.

9. In D6, the second control module is configured to control the input interface to display an image of the heating zone for the object based on the position of the detected object (D6a paragraphs [0038], [0070], [0086], [0143]). The image of the heating zone for the object is displayed in an area of the input interface corresponding to the position of the object on the cover plate. In the absence of any guidance in the patent on the meaning of the term "power image", the recited step encompasses an indication of a binary kind, indicating, for example, whether the coils are operating or not. This is known from D6 (D6 figure 8, D6a paragraphs [0086]). Features M1.11 and M1.12 are thus known from D6.

10. Document D6 fails, however, to disclose a power image in a central region of the heating zone image, as set out in feature M1.13. Likewise, D6 does not disclose features M1.14 and M1.15 of the input interface being

configured to provide the second control module with the touch input, based on the touch input being received on the power image, and of the second control module being configured to control the input interface to display at least one of an image indicating heating intensity or a timer image, based on the touch input received from the input interface.

11. Paragraph [0205] in D6a refers to a plurality of light guides arranged around each of a plurality of working coils but does not state that the light guides are configured to indicate heating intensity of each of the plurality of working coils, the plurality of light emitting elements being arranged vertically below each of the plurality of light guides. Features M9.1 to M9.3 are not disclosed in D6.

12. In conclusion, features M1.8, M1.13 to M1.15, and M9.1 to M9.3 are not disclosed in D6.

13. The subject-matter of claim 1 of auxiliary request 2 is, therefore, novel (Article 54 EPC).

Admission of document D11 into the proceedings

14. The established jurisprudence of the Boards of appeal with regard to review of discretionary decisions of the first instance elaborates on the decision in G 7/93, *Late amendments,* OJ EPO, 1994, 775. This means that "A Board of Appeal should only overrule the way in which a department of first instance has exercised its discretion if the Board concludes it has done so according to the wrong principles, or without taking into account the right principles, or in an unreasonable way" (see T 491/09, Reasons 1.1).

15. D11 is referred to, by reference, in D6 with regard to one aspect of the claimed invention. Under the circumstances, as acknowledged by the Opposition Division and contrary to the patentee's view, D11 is *prima facie* relevant.

16. The Opposition Division based its decision on a criterion commonly relied upon when deciding on the admissibility of late filed evidence. Moreover, there is no evidence in the file wrapper suggesting that the Opposition Division failed to consider all relevant principles when deciding on the admissibility issue. This was not argued by the proprietor, and the Board cannot identify any such deficiency. Finally, nothing unreasonable results from a decision to admit a document expressly referred to in a relevant item of prior art. Document D11 is thus admitted into the proceedings.

Inventive step of auxiliary request 2

17. D6 discloses features M1.1 to M1.7, and M1.9 to M1.12 of claim 1. It is a reasonable starting point for the skilled person.

18. Features M1.8, M1.13 - M1.15 and M9.1 - M9.3 relate to different partial problems addressed by the invention. This justifies addressing the question of their obviousness independently.

19. Feature M1.8 provides visual feedback, to the user, on the position of the heating zone, i.e. the area corresponding to the working coils beneath the object seated on the surface of the cover plate.

20. The problem solved by feature M1.8 consists in defining means adapted to notifying the user of the existence, position and size of a heating zone on the cover plate.

21. Contrary to the proprietor's argument, the reference in paragraph [0205] in D6a to document D11 constitutes a clear and unambiguous pointer to this document. The fact that it cannot be established with certainty that the content of D11 forms part of the disclosure of D6 (see above) does not affect the finding that its mention with regard to one aspect of the invention is a clear incentive for the skilled person to look at its content. When looking at the content of D11, the skilled person would have recognised that the combination of light source and light body, to notify a user of the heating region of each heating coil, makes it relevant for a skilled person seeking a solution to the objective problem. Therefore, it would have been obvious for the skilled person to consult D11 and incorporate the configuration disclosed therein.

22. It follows that the skilled person would have incorporated the configuration disclosed in D11 with its plurality of light guides fixed crosswise at every point adjacent to four heating coils and surrounding the heating coils (figures 2, 5, and 6 in D11) and its plurality of light emitting elements vertically disposed below each of the plurality of light guides (figures 2, 5 and 6). This would result in a configuration according to feature M1.8, with a plurality of light emitting elements configured to be controlled by the second control module and disposed vertically below a periphery of each of the plurality of working coils in the induction device of D6.

23. The contribution resulting from the combination of distinguishing features M1.13 to M1.15 is of a technical nature, because visual indications of technical conditions prevailing in a system can be considered technical aspects of an invention (see T 528/07, *Portal system/ACCENTURE,* Reasons 3). The contribution provided by features M1.13 to M1.15 extends thus beyond a mere display of information, since the displayed heating intensity reflects a working state of the induction device. In contrast, no technical contribution can be discerned in the display of the power image in a central region of the image of the heating zone: if the information underlying the power image is technical, that is not the case for the location of this power image.

24. Features M1.13 to M1.15, in combination, control the display of internal conditions of the induction device. It adds to the information made available to the user.

25. The objective problem solved by features M1.13 to M1.15 consists in providing visual feedback regarding coil activation when using the induction hob, thus limiting the risks of wrong assessments regarding the cooking strategies.

26. D6 discloses control modules that are configured to control the input interface to display various parameters of the cooking process based on the touch input received by the input interface (D6a paragraphs [0074], [0075], [0076], [0088]). The location of the power image in the central image of the heating zone is not disclosed, and nor is there any suggestion of displaying the heating intensity based on the touch input.

27. However, in the Board's view, the display of heating intensity in a cooking appliance was a common feature of hobs. Assuming, in favour of the proprietor, that this feature is not implicit in the hob of D6, its introduction in the induction device would have been obvious and cannot justify an inventive step. This also applies to the selection of the power image to display the heating energy.

28. For the reasons set out above with regard to feature M1.8, consideration of document D11 and the incorporation of the configuration disclosed therein with its plurality of light guides mounted crosswise at each point adjacent to four heating coils and surrounding the heating surface, and with a plurality of light emitting elements arranged below each of the plurality of light guides, in the device of D6, leads to an induction device with features M9.1 and M9.3.

29. Features M9.1 and M9.3 would thus have been obvious in view of a combination of D6 and D11 and do not justify the existence of an inventive step.

30. The subject-matter of claim 1 of auxiliary request 2 further differs from D6 by the additional functionality of the light guides being configured to indicate the heating intensity for each of the working coils, as defined in feature 9.2.

31. The opponent's argument, that feature 9.2 was known from D11 and that its incorporation into the induction device of D6 leads to the claimed subject-matter, was first raised at the oral proceedings before the Board (see section X of the "Summary of facts and submissions"). This constituted an amendment to the opponent's case within the meaning of Article 12(4)

RPBA. For this reason, and in the absence of exceptional circumstances, the argument was not admitted in the proceedings (Article 13(2) RPBA).

32. In the Board's understanding, the claim language implies, in the context of the invention, that the light elements associated with the light guides generate signals of different intensities reflecting the state of the induction coils. It rejects the opponent's argument that the claim language merely requires light guides capable of indicating different intensities - a feature inherent in conventional light guides.

33. The recited functionality provides visual feedback on the internal operating state of the working coils. It is technical (cf. paragraph 23 above).

34. The information regarding the heating intensity is perceivable from a greater distance from the cover plate than in D6, thus further improving the user's experience. In particular, the user does not need to consult the user interface to find out the heating intensity.

35. Document D8 discloses a cooking appliance with multiple heating units (D8 page 2, first paragraph). The device comprises light segments to indicate that corresponding heating elements are active. This concerns a similar problem to the objective problem defined above. Its teaching would thus have been considered by the skilled person.

36. D8 teaches on page 5, at lines 7-28, how the brightness of a light source can be varied to indicate a set power or cooking level. The skilled person seeking to notify

the user of the heating intensity would have considered the solution suggested in D8 and adapted D6 accordingly. The fact that the intensity levels correspond to predetermined levels does not affect this finding. The reference, in claim 1, to varying intensity merely implies that the intensities that can be displayed are not just binary in nature, reflecting exclusively the on/off state of the coils.

37. The incorporation of Feature M9.2 in the induction device of D6 would, therefore have been obvious and does not justify the existence of an inventive activity.

38. It follows that the partial problems identified with regard to the distinguishing features would have been solved in respectively obvious manners by the person skilled in the art. The subject-matter of claim 1 of auxiliary request 2 lacks an inventive step within the meaning of Article 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

D. Meyfarth P. Scriven

Decision electronically authenticated