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

Case Number: T 1195/18 - 3.4.01

Application Number: 12173914.8

Publication Number: 2544508

IPC: H05B6/68, H05B6/64, H05B6/70

Language of the proceedings: EN

Title of invention:
A method for heating food

Patent Proprietor:
Goji Limited

Opponents:
Fritsche, Rainer
Whirlpool EMEA S.p.A.

Headword:
A method for heating food / Goji Ltd.

Relevant legal provisions:
EPC Art. 76(1), 100(c), 123(2)
RPBA Art. 12(4)

Keyword:

Amendments - main request and auxiliary requests 1 - 9, 10a,
10, 11 - allowable (no)

Auxiliary request 10a - admitted (yes)



Beschwerdekammern

Boards of Appeal

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Case Number: T 1195/18 - 3.4.01

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

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Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted on 9 March 2018
revoking European patent No. 2544508 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman P. Scriven
Members: P. Fontenay
 C. Almberg

Summary of Facts and Submissions

- I. The appeal was filed by the patent proprietor (appellant) against the decision of the Opposition Division to revoke European patent 2 544 508. The corresponding European patent application 12 173 914 was filed as a divisional application of earlier European patent application 07 766 892 (the parent application).

- II. Two oppositions were filed against the patent. They both relied on the grounds of Articles 100(a), 100(b) and 100(c) EPC.

- III. In its decision, the Opposition Division held that the ground for opposition raised under Article 100(c) EPC prejudiced the maintenance of the patent as granted and also that auxiliary requests 1 to 11 contained subject-matter extending beyond the content of the application as filed (Article 123(2) EPC). The other grounds for opposition raised under Articles 100(a) EPC and 100(b) EPC were not addressed.

Concretely, the Opposition Division held that the step in claim 1 of "performing measurements indicative of the state of the food, wherein the measurements comprise measurements of return loss and power coupled from one feed to other feeds" was not disclosed in the original parent application. The statement in the parent application on page 54, line 32 to page 55, line 4, with regard to a script including decisions made according to food state and the further indication in

the following sentence that "various measuring methods are described above" did not constitute a sufficient support for the claim's wording. In particular, the method regarding measurements of a phase change on page 17, lines 10 to 13, via measurements of return loss and coupling of the feeds was not equivalent to measuring a food state.

Also, the step in claim 1 of "providing a script wherein the script includes decisions made according to a state of the food" without referring to the wrapping material defined added subject-matter. According to the original disclosure, instructions for processing the packaged food were provided in a recording element in the package or indexed to a remote location in the recording element. Hence, both the package and the script were essential for adequate heating of the food, which is why the script could not be separated from the package.

- IV. On appeal, the proprietor requested, as a main request, that the decision of the Opposition Division be set aside and that the patent be maintained as granted. In the alternative, it requested maintenance of the patent according to one of auxiliary requests 1 to 9, 10a, 10 and 11.

Auxiliary request 10a was filed for the first time with the statement of grounds of appeal. All other requests were subject of the appealed decision.

The proprietor referred to various passages of the original parent application, which, in its view, established that the various measurements regarding the return losses and coupling between the various feeds

provided information as to the state of heating. It submitted, in particular, that detecting a change in the state of the food was indicative of the state of the food. It further stressed that the reference to the "full s-parameters vs frequency function" in the description incorporated the return loss and all the parameters indicative of the coupling between a selected feed and all other feeds in the system. The preliminary finding of the Opposition Division that said full s-parameters were possibly limited to the parameters obtained for a single feed did not reflect a technically meaningful understanding of said terms. As to the missing definition of the wrapping material in claim 1, the proprietor emphasised that this material was not functionally associated to the script and that it could thus be omitted from the claim's definition.

Reference was made in the statement of grounds to three annexes. Annex 2 was a copy of a statement signed by Dr Moshe Manela to be used as evidence of the skilled person's interpretation of parts of the application as filed. Annex 3 was an extract from a text book providing evidence for common general knowledge. Annex 1 was a curriculum vitae of Dr Manela.

- V. In reply, opponent 1 (respondent) requested, as a main request, that the appeal be dismissed, i.e. that the decision to revoke the patent be confirmed. As an auxiliary measure, if the Board decided that any request filed by the appellant did not contravene the requirements regarding added subject-matter, opponent 1 requested that the case be remitted to the Opposition Division for examination of the other grounds for opposition under Articles 100(a) and 100(b) EPC.

Opponent 1 further requested that the new auxiliary request 10a, and Annexes 1 to 3 filed with the statement of grounds of appeal not be admitted into the appeal proceedings.

VI. Opponent 2 (respondent) did not react to the statement of grounds of appeal.

VII. In a communication issued under Article 15(1) RPBA, the parties were informed of the Board's preliminary opinion.

In substance, the proprietor's arguments that a basis existed in the original application and the earlier application for the step in claim 1 of "performing measurements indicative of a state of the food" did not convince the Board. The measurements of return loss and power coupled between one feed and the other feeds were, in effect, related to heating properties of the heating process rather than to physical properties of the food. While it was acknowledged that a change in measured parameters might have been somehow indicative of a change in the state of the food, it was insufficient to draw any conclusion as to said state, a concept that was not even clearly defined throughout the patent application.

A fundamental issue to be addressed under Article 100(c) EPC was whether a basis existed in the original earlier application for combining a heating method comprising a step of providing a script with the calibration method, in which the scattering parameters were determined by measurements of return loss and power coupled from one feed to other feeds.

A further issue consisted in determining whether the reference to a script in claim 1 without any reference to a wrapping or package amounted to an unallowable intermediate generalisation. The original disclosure referred to a script provided directly on a recording element present on the package or at a remote location accessible by way of an index provided on said recording element on the package.

- VIII. None of the parties commented on the substance of the preliminary opinion issued by the Board. The proprietor and opponent 2 merely indicated that they did not intend to attend the oral proceedings. Opponent 1 reformulated its previously unconditional request for oral proceedings emphasising that the request only applied if the Board intended to set aside the decision of the Opposition Division to revoke the patent.
- IX. The Board did not identify any reason to depart from its preliminary opinion. The oral proceedings were cancelled accordingly.
- X. Claim 1 of the proprietor's main request (patent as granted) reads:

*A method for heating food (1504, 1508, 1818) in a cavity (10, 98) using RF energy via a plurality of feeds (16, 18, 20) comprising:
providing a script wherein the script includes decisions made according to a state of the food, performing measurements indicative of the state of the food, wherein the measurements comprise*

measurements of return loss and power coupled from one feed to other feeds, varying heating parameters according to the script, heating the food using the varied heating parameters.

In claim 1 of auxiliary request 1, the step of performing measurements indicative of the state of the food reads:

performing measurements indicative of the state of the food, wherein the measurements comprise measurements of return loss and power coupled from one feed to other feeds to provide feedback comprising a full s-parameters vs. frequency function.

In claim 1 of auxiliary request 2, the step of performing measurements indicative of the state of the food reads:

performing measurements indicative of the state of the food, wherein the measurements comprise measurements of heating efficiency by measuring power coupled from one feed to other feeds at each frequency in a certain band (S_{ij}) and return loss at each frequency (S_{ii}).

In claim 1 of auxiliary request 3, the step of performing measurements indicative of the state of the food reads:

performing measurements indicative of the state of the food, wherein the measurements comprise measurements of the net power efficiency $\eta_1 = 1 - (\text{Return loss} + \text{coupled power from one feed to other feeds}) / \text{Input power}$.

In claim 1 of auxiliary request 4, the step of performing measurements indicative of the state of the food reads:

performing measurements indicative of the state of the food, wherein the measurements comprise measurements of net power efficiency $\eta_1 = 1 - (\text{Return loss} + \text{coupled power from one feed to other feeds}) / \text{Input power}$, the measurements comprising sweeping over a band of frequencies and measuring the input reflection coefficients, S_{11} , S_{22} , S_{33} and the transfer coefficients S_{12} , S_{23} , S_{13} during the sweep.

In claim 1 of auxiliary request 5, the state of the food referred to in the step of providing a script has been specified compared with claim 1 as granted. Said step reads:

providing a script wherein the script includes decisions made according to a state of the food, the state of the food comprising one or more of: a phase; a temperature; a composition change; a specific heat constant change and a dielectric change of the food.

In claim 1 of auxiliary request 6, the steps of providing a script and of performing measurements have been specified. They read:

providing a script wherein the script includes decisions made according to a state of the food, the state of the food comprising one or more of: a phase; a temperature; a composition change; a specific heat constant change and a dielectric change of the food;
performing measurements indicative of the state of the food, wherein the measurements comprise measurements of return loss and power coupled from one feed to other feeds to provide feedback comprising a full s-parameters vs. frequency function.

The step of providing a script has been specified in claim 1 of auxiliary request 7, compared to claim 1 as granted. It reads:

providing a script on a recording element or at a remote location wherein the script includes decisions made according to a state of the food.

Similarly, the step of providing a script has been specified in claim 1 of auxiliary request 8, compared to claim 1 as granted. It reads:

providing a script on a recording element or at a remote location wherein the remote location is accessed by an identifier stored on a recording element; wherein the script includes decisions made according to a state of the food.

In claim 1 of auxiliary request 9, the step of providing a script has been further specified compared to claim 1 as granted. It reads:

providing a script at a remote location or on a recording element in the form of a tag; wherein the script includes decisions made according to a state of the food.

Claim 1 of auxiliary request 10a reads:

*A method for heating food in a cavity using RF energy via a plurality of feeds at a plurality of frequencies, the method comprising:
providing a script wherein the script includes decisions made according to a state of the food, performing measurements indicative of the state of the food, wherein the measurements are indicative of dielectric change in the food, and wherein the measurements comprise measurements of power coupled from one feed to other feeds at each frequency (S_{ij}) and return loss at each frequency (S_{ii}) to provide feedback comprising a full s-parameters vs. frequency function, which continuously or periodically changes according to changes in the food,
varying heating parameters according to the script, heating the food using the varied parameters.*

Claim 1 of auxiliary request 10 reads:

A method for heating food in a cavity using RF energy via a plurality of feeds, wherein the food

is in a package and the package comprises a recording element, the method comprising: providing a script on the recording element or at a remote location which is accessed by an identifier on the recording element, wherein the script includes decisions made according to a state of the food, performing measurements indicative of the state of the food, wherein the measurements are indicative of phase changes and/or temperature changes and/or composition change and/or specific heat constant change and/or dielectric change in the food, and wherein the measurements comprise measurements of return loss and power coupled from one feed to other feeds to provide feedback comprising a full s-parameters vs. frequency function, which continuously or periodically changes according to changes in the food, varying heating parameters according to the script, heating the food using the varied parameters.

Claim 1 of auxiliary request 11 reads:

A method for heating food in a cavity using RF energy via a plurality of feeds at a plurality of frequencies, wherein the food is in a package and the package comprises a recording element, the method comprising: providing a script on the recording element or at a remote location which is accessed by an identifier on the recording element, wherein the script includes decisions made according to a state of the food, performing measurements indicative of the state of the food, wherein the measurements are indicative

of dielectric change in the food, and wherein the measurements comprise measurements of power coupled from one feed to other feeds at each frequency (S_{ij}) and return loss at each frequency (S_{ii}) to provide feedback comprising a full s-parameters vs. frequency function, which continuously or periodically changes according to changes in the food, varying heating parameters according to the script, heating the food using the varied parameters.

Each of the different sets of claims also includes a respective independent claim directed to an RF heater.

Reasons for the Decision

1. The present divisional application 12 173 914 shares a common description and set of drawings with the earlier application 07 766 892 (see point 26.1 in EPO Form 1001E "request for grant of a European patent" with its explicit reference to the description and drawings of the previously filed application). The originally filed claims do not provide a basis for the present claims of all claim requests. This is not contested by the proprietor. Hence, it is only the description or the drawings that could provide such a basis. The description and drawings of the present application are, however, identical with the description and drawings of the earlier application. As a consequence, the various issues of added subject-matter always concern both Article 76(1) and 123(2) EPC. In the following, it is exclusively referred to the description of the earlier application.

2. The present decision relies on the grounds developed by the Board in its preliminary opinion. In the absence of any reaction to said opinion, the Board did not identify any reason to depart from this preliminary assessment which, therefore, is essentially reproduced in the following.

Main Request - added subject-matter - Article 100(c) EPC

3. Claim 1 of the main request (i.e. the patent as granted) defines a method for heating food in a cavity. It comprises a step of "performing measurements indicative of a state of the food".
4. The issue to be decided under added subject-matter raises the question as to what is actually meant by the term "state of the food". The passages of the description on page 55, lines 15 to 33, and on page 75, line 25, to page 77, line 14, are not conclusive.
5. The passage of the description on page 56, lines 11 - 14, reads:

In an exemplary embodiment of the invention, no script is provided. Instead, the heating times and/or parameters are based directly on the desired results, measured food properties and/or measured heating properties. Such desired results may be user provided or indicated by the recordable element.

Although referring to an alternative approach, this passage underlines that the food properties (which may be regarded as indicative of the food state) are to be distinguished from the heating properties.

6. In the appellant's view, the detection of a change in state of the food implicitly involves parameters indicative of the state of the food.
7. This argument is not persuasive.
8. First, in view of the distinction made in the paragraph on page 56 reproduced above, the measurements of return loss and power coupled from one feed to other feeds defined in granted claim 1 appear to refer to heating properties of the heating process. While a change in said measured parameters may somehow be indicative of a change in the state of the food, the measurements by themselves should be distinguished from parameters regarding said food properties. This is not contested by the affidavit in Annex 2 (see point 8).
9. Second, a conclusion regarding the state of the food can be drawn from measurements regarding a change of the state only if the initial state is known. It follows that the information obtained from measurements indicative of possible changes in the properties of the food, are, as such, not sufficient to define this state. A further consequence is that the reference on page 55, lines 3 and 4, to the "various measuring methods described above", cannot be directly and unambiguously related to the measurements of return loss and coupling powers described with regard to the calibration phase of the heating system. These measurements are directly affected by parameters regarding for example the volume or the shape of the radiated item, and thus not indicative of the state of the food.

10. In the proprietor's view, the measurements do not have to be fully determinative of every parameter of the food to be indicative of said state.
11. It is, however, observed that the information that should be derived from the measurements actually carried out must be sufficient to identify the food states referred to in the script.
12. For completeness, it is stressed that the Board is not convinced by the Opposition Division's view according to which the original parent application did not disclose the feature of power coupled from one feed to the other feeds. The Board has no doubts in this respect, that the reference to the full s-parameters (Page 4, lines 12 to 23) is to be understood as referring to the complete set of terms present in the scattering matrix. This view is confirmed by the content of the original application.
13. This does, however, not affect the above findings. The knowledge of the full s-parameters, while indeed characterising the heating process, is not sufficient to draw any conclusion as to the state of the food.
14. It follows that the subject-matter of claim 1 extends beyond the content of the application as filed, and beyond the content of the earlier application (Article 100(c) EPC).
15. In the absence of a reaction to the communication of the Board, and in view of the fact that the above analysis is sufficient as such to establish that the claimed subject-matter extends beyond the content of the application as filed, the Board does not rule on the further question of whether a basis exists in the

original application for combining a heating method comprising a step of providing a script with the calibration method in which the scattering parameters are determined by measurements of return loss and power coupled from one feed to other feeds.

16. Similarly, the Board does not rule on the allowability of the intermediate generalisation resulting from the omission in the independent claim of the wrapping or package while referring to a script which include decisions made according to a state of the food.

Auxiliary requests - consideration

17. Auxiliary request 10a is a new request filed with the statement of grounds of appeal. The appellant argued, that auxiliary request 10a was filed at the first opportunity available, in response to new objections raised at the oral proceedings before the Opposition Division. The Board does not support the opponent's view that this request could and should have been presented in the first instance proceedings and decides to admit it into the appeal proceedings, *inter alia* because the amendments are straightforward in view of auxiliary request 11 (Article 12(4) RPBA 2020).

Auxiliary requests - added subject-matter (Articles 123(2) and 76(1) EPC)

18. For the reasons developed above in context with the main request, it is considered that claim 1 according to auxiliary requests 1 to 4 each defines added subject-matter. The measurements defined in the respective claims 1 are not disclosed in the original

disclosure as providing any indication in respect of the state of the food. The amendments made in claim 1 of each of auxiliary request 7 to 9 have no bearing on the above findings which apply *mutatis mutandis* to said requests.

19. Claim 1 according to auxiliary request 5, as well as claim 1 according to auxiliary request 6, each defines added subject-matter in that it incorporates definitions of the state of the food which have no basis in the original application. Moreover, the original application does not disclose that the recited measurements of power loss and coupled power would be indicative of a temperature, of a composition change, a specific heat constant change or a dielectric change of the food.

Claim 1 of each of auxiliary requests 10a, 10 and 11 incorporate definitions of the state of the food which, as observed above with regard to auxiliary requests 5 and 6, have no basis in the original application. There is also no indication in said application that the measurements of power loss and coupled power would be indicative of a temperature, of a composition change, a specific heat constant change or a dielectric change of the food.

20. In conclusion, the amendments introduced in claim 1 of each of the auxiliary requests 1 to 9, 10a, 10 and 11, contain features regarding the state of the food and its measurements which neither have a basis in the corresponding original divisional application, contrary to Article 123(2) EPC, nor in the original earlier application, contrary to Article 76(1) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



D. Meyfarth

T. Petelski

Decision electronically authenticated