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**Datasheet for the decision
of 12 December 2023**

Case Number: T 0504/20 - 3.2.03

Application Number: 14199653.8

Publication Number: 2902710

IPC: F24C3/12, F24C7/08, A47J36/00,
G05B13/02

Language of the proceedings: EN

Title of invention:

Method and device for monitoring the safe use of a cooker

Patent Proprietor:

Innohome Oy

Opponent:

Safera OY

Headword:

Relevant legal provisions:

EPC Art. 111, 123(2)
RPBA 2020 Art. 11

Keyword:

Amendments - allowable (yes) - extension beyond the content of the application as filed (no) - added subject-matter (no) - opposition proceedings

Appeal decision - remittal to the department of first instance (yes)

Remittal - (yes) - special reasons for remittal

Decisions cited:

G 0003/14

Catchword:



Beschwerdekammern

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Case Number: T 0504/20 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 12 December 2023

Appellant: Innohome Oy
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 15 January 2020
revoking European patent No. 2902710 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman C. Herberhold
Members: R. Baltanás y Jorge
D. Prietzel-Funk

Summary of Facts and Submissions

- I. European patent No. 2 902 710 B1 relates to a "*method and device for monitoring the safe use of a cooker*".
- II. An opposition was filed against the patent based on Articles 100(b), 100(c) and 100(a) EPC in conjunction with Articles 54 and 56 EPC.
- III. This appeal is against the decision of the opposition division to revoke the European patent because none of the requests on file was in accordance with Article 123(2) EPC.

This decision was appealed by the patent proprietor (appellant).

- IV. At the end of the oral proceedings, the requests of the parties were as follows.

The appellant requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the main request or auxiliary request 1, 2 or 3, all filed with the letter dated 17 October 2019.

The opponent (respondent) requested that the appeal be dismissed.

- V. Claim 1 of the main request, filed for the first time on 17 October 2019 and also the main request in the appeal proceedings, including the feature numbering based on that adopted in the appealed decision, reads as follows (amendments compared to originally filed

claim 1 are marked in bold; amendments compared to granted claim 1 are in bold and underlined):

- a1 *A method for monitoring the safe use of a cooker,*
- b1 *in which method **the thermal behaviour of the cooker is identified***
- c1 ***and in which method** is used a monitoring device*
- d1 *in which the set values of safety limits based on temperature and humidity and/or gas content measurements are set for sounding and alarm or cutting off the electricity or gas supply to the cooker when the safety limits are exceeded,*
- e1 *the temperature is measured above the cooker,*
- f1 *the moisture and/or gas content above the cooker is measured,*
- g1 *the set values of the safety limits for the temperatures measured*
- h1 *and the moisture and/or gas content measured*
- i1 *and/or their rates of change are set*
- j1 *and the presence of the user is monitored on the basis of the use of the cooker and/or by means of a sensor which detects the presence of a person and/or by means of direct control feedback given by the user,*
- k1 *~~characterised in that~~ **wherein** the monitoring device is taught user-specific safe safety limit values automatically and intuitively on the basis of the use of the cooker,*
- l1 *and the set values of the safety limits are automatically changed or adjusted to set values determined to be safe on the basis of the said teaching,*
- m1 ***and** **characterised in that thermal behaviour of the cooker is identified and learned on the basis of the a temperature difference between the***

surface of the cooker and a cooker hood as a function of time.

Claim 5 of the main request, with the feature numbering added, reads as follows (amendments compared to originally filed claim 4 are marked in bold; amendments compared to granted claim 5 are in bold and underlined):

- a5 A device for monitoring the safe use of a cooker
- b5 **by identifying the thermal behaviour of the cooker,**
- c5 the device including a monitoring device which comprises
- g5 - a programme-controlled processor (1) with a memory in which the set values of the safety limits for the safe use of the cooker are stored
- e5 - a transmitter and/or a signalling device
 - two or more of the following sensors:
 - a temperature sensor (7) which measures radiation heat
 - a temperature sensor (8) which measures convection and/or conduction heat
 - a humidity sensor (4)
 - a gas sensor (9)
 - a light sensor (5, 11)
- d5 whereupon when the measured values of the sensors exceed the set values of the safety limits, the monitoring device transmits a monitoring message and/or sounds an alarm,
- j5 ~~characterised in that wherein~~ the monitoring device comprises, or the monitoring device is connected to, a user interface which is arranged to identify the presence of the user on the basis

of the use of the cooker or by means of a presence sensor (6, 16) or directly by means of control feedback given by the user,

- k5** ~~**and that [characterised in that]**~~ **wherein** the monitoring device is arranged to automatically learn and/or adjust the set values of the safety limits by means of the said user interface individually on the basis of the use of the cooker and/or the measurement results of the sensors when the user's presence has been identified,
- m5** **[and] characterised in that the monitoring device is configured to identify and learn thermal behaviour of the cooker on the basis of a temperature difference between the surface of the cooker and a cooker hood as a function of time.**

Claim 6 of the main request, with the feature numbering added, reads as follows (amendments compared to originally filed claim 5 are marked in bold; amendments compared to granted claim 6 are in bold and underlined):

- a6** *A monitoring and control device for the safe use of a cooker*
- b6** ***by identifying the thermal behaviour of the cooker,***
- c6** *including*
- 1) *a monitoring device comprising*
- g6** - a programme-controlled processor (1) with a memory

- e6
 - a transmitter (2)
 - two or more of the following sensors:
 - a temperature sensor (7) which measures radiation heat
 - a temperature sensor (8) which measures convection and/or conduction heat
 - a humidity sensor (4)
 - a gas sensor (9)
 - light sensor (5, 11)
- c6b
 - and
 - 2) a control unit comprising
 - a programme-controlled processor (1) with a memory
 - a measurement device (18, 22) for measuring the power or gas flow of the cooker
 - an actuator (19, 21) for cutting off the electricity or gas supply
 - a receiver (14) for receiving monitoring and measurement messages from the transmitter (2),
- d6
 - in which case the set values of the safety limits for the safe use of the cooker are stored at least in one of the said memories, and if the sensor values exceed the set values of the safety limits, the control unit is arranged to cut off the electricity or gas supply to the cooker,
- j6
 - ~~characterised in that wherein~~ the combination of the monitoring device and control unit comprises a user interface which is arranged to identify the presence of the user on the basis of the use of the cooker or by means of a presence sensor (6, 16) or directly by means of control feedback given by the user,
- k6
 - [characterised in that] ~~and that wherein~~ the monitoring device is arranged to automatically learn and/or adjust the set values of the safety

limits by means of the said user interface individually on the basis of the use of the cooker and the measurement values by the sensors when the user's presence has been identified,

m6 [and] characterised in that [at least one of] the monitoring device [and the control unit] is configured to identify and learn thermal behaviour of the cooker on the basis of [the] a temperature difference between the surface of the cooker and a cooker hood as a function of time.

VI. The appellant's arguments on the main request can be summarised as follows.

The amendments compared to the claims as originally filed were based on page 8, lines 7 to 34 of the description as originally filed. Contrary to the respondent's arguments and the decision under appeal, no unallowable extension of subject-matter had been made.

The way of identifying the thermal behaviour of the cooker by measuring the temperature difference between the surface of the cooker and a cooker hood as a function of time - using a pot with 1 litre of water and the cooker plate being at the highest power setting - as disclosed in originally filed page 8, was just an indicative example. What was essential to the invention was that measuring the defined temperature difference in any scenario allowed identifying the thermal behaviour of the cooker, as defined in features m1, m5 and m6. The claims did not relate to the identification of the type of cooker but its thermal behaviour.

Nor were the claims limited to identifying the thermal behaviour of the cooker based on the user's behaviour.

The identification was based on the above-mentioned temperature difference, which the originally disclosed monitoring device was able to calculate. Therefore, it was immaterial whether the user's behaviour could be detected with the monitoring device.

It was implicit for the skilled person that using the monitoring device was an intended option for identifying the thermal behaviour of the cooker. The monitoring device was originally disclosed as comprising sensors for measuring temperature at the surface of the cooker and the cooker hood. The skilled person understood that identifying the thermal behaviour of the cooker as disclosed on page 8 could be done by the monitoring device since it comprised the sensors necessary for this. This was an originally disclosed implicit alternative. Originally filed page 8 did not disclose that the monitoring device was the only device intended for the identification of the thermal behaviour of the cooker.

Claim 5 might be unclear on the presence of the required sensors, but the skilled person understood - when interpreting the claim with a mind willing to understand - that the monitoring device had to include both temperature sensors in view of feature m5. Otherwise, the temperature difference between the surface of the cooker and a cooker hood could not be ascertained as defined by this feature.

Therefore, the identification and learning of the thermal behaviour of the cooker on the basis of the temperature difference between the surface of the cooker and a cooker hood as a function of time (features m1, m5 and m6) was clearly and unambiguously disclosed in the originally filed application for the

claimed method and devices. The patent application as a whole concerned the automatic adjustment of safety limits. Page 8 of the description and Figure 6, which disclosed the identification of the thermal behaviour of the cooker as defined in the claims, had to be understood as envisaged within this intended automation.

VII. The respondent's arguments on the main request can be summarised as follows.

The only way originally disclosed for identifying the thermal behaviour of the cooker was a procedure for heating a pot with one litre of water with the cooker being set to its highest power setting. Under these conditions, the temperatures were measured from when the cooker was activated. All these necessary features had been omitted in claims 1, 5 and 6, thus resulting in an unallowable intermediate generalisation.

Additionally, the original application only disclosed a monitoring device for selecting the limiting values according to which the device takes action; not a monitoring device which identified the thermal behaviour of the cooker as in features m5 and m6. In practice, the control device had to be part of the means for identifying the thermal behaviour of the cooker since it was the only device which had access to the information on the "switched on" status of the cooker. The monitoring device only measured temperatures and had no means of establishing **when** the temperature difference was to be ascertained according to the only disclosure of the application - i.e. when the cooker was switched to its highest power setting.

Furthermore, the monitoring device of claim 5 comprised "two or more" sensors chosen from a list including a temperature sensor which measures radiation heat, a temperature sensor which measures convection and/or conduction heat, a humidity sensor, a gas sensor and a light sensor (feature e5). The subject-matter of claim 5 thus encompassed embodiments in which a monitoring device with just one or no temperature sensor was allegedly configured to identify and learn the thermal behaviour of the cooker on the basis of a temperature difference between the surface of the cooker and a cooker hood (feature m5). This was clearly impossible and not originally disclosed.

Moreover, the claimed monitoring device was not able to identify the thermal behaviour of the cooker only on the basis of the temperature difference since other factors such as the use of an empty or full cooking utensil had a decisive influence on the thermal behaviour of the cooker. Measuring a difference of temperatures when a pan was used in a given way could not help in identifying the thermal behaviour of the cooker in general since the thermal behaviour would vary when the pan was used in a different manner. Therefore, the claimed monitoring device was not able to identify the type of cooker on the basis of the measurements defined in the claims.

Consequently, the claims had been amended by adding embodiments which could not work, thus extending the subject-matter of the claims beyond the original application.

Reasons for the Decision

1. Main request - Article 123(2) EPC

1.1 Alleged unallowable intermediate generalisation

The skilled person learns from originally filed page 8, lines 27 to 34 that the thermal behaviour of the cooker is *"easy to identify and learn on the basis of the temperature difference between the cooker and the cooker hood"*. The paragraph goes on to explain why this is so: *"...the graph shows that the gas cooker releases most heat into the surroundings and the surface of the gas ring heats up most, whereas at the other extreme in connection with the induction cooker, the least heat escapes into the surroundings and the cooker plate heats up the least"*. This disclosure is independent of what kind of kitchen utensil is placed on the cooker, its content or at what power level the cooker is set.

Thus, even if an example setting out these three factors is provided in the paragraph preceding the cited disclosure (using a pot with 1 litre of water and with the highest power setting of the cooker, see page 8, lines 22 to 25), the skilled person understands that these are not the only conditions under which the identification of the thermal behaviour of the cooker can be achieved. This is confirmed by the wording *"for example"* on page 8, line 11, which indicates that using a pot with water for identifying the thermal behaviour is only an example.

Claims 1, 5 and 6 define the identification of the **thermal behaviour** of the cooker and **not** the identification of the **cooker type**. Identifying the thermal behaviour on the basis of the temperature

difference between the cooker and the cooker hood (see page 8, lines 28 and 29) is thus originally disclosed.

Consequently, the omission of the conditions disclosed on page 8, lines 22 to 25 in claims 1, 5 and 6 does not result in an unallowable intermediate generalisation.

1.2 Necessary capabilities of the monitoring device in view of features m1, m5 and m6

Since the argument on the alleged need for the cooker to be switched to its highest power setting when determining its thermal behaviour is not persuasive (see point 1.1 above), the originally filed disclosure does not specify that the monitoring device must be capable to ascertain the power level at which the cooker is being used. The alleged absence of a means in the monitoring device for obtaining this information is therefore immaterial for the discussion.

According to the original disclosure, the thermal behaviour of the cooker is identified on the basis of a temperature difference between the surface of the cooker and a cooker hood as a function of time (see page 8, lines 27 to 29 and Figure 6). Originally disclosed Figure 6 shows an initial point in time when the temperature is at its minimum. The Board agrees that this is when the cooker is switched on.

However, according to page 8, line 7, the graph of Figure 6 is only an indicative example. What is decisive is that different cookers differ from one another and their thermal behaviour is easy to identify and learn on the basis of the temperature difference between the cooker and the cooker hood (page 8, lines 27 to 34). Thus, the only condition for identifying the

thermal behaviour of the cooker is that the temperature sensors are available. Since the monitoring device comprises temperature sensors (7, 8) suitable for measuring the temperature of the surface of the cooker and above it (see page 6, lines 5 to 13), it comprises the necessary elements for identifying the thermal behaviour of the cooker by measuring the temperature difference as disclosed on page 8, lines 28 and 29.

1.3 Implicit alternative for identifying thermal behaviour with the monitoring device

The originally filed application hinges around the provision of a device (or method) based on automatic learning for setting safety limits in the use of a cooker (see page 3, lines 4 to 7).

Lines 7 and 8 of originally filed page 8 disclose that better parameters for learning can be obtained by identifying the cooker type as in Figure 6. Lines 7 to 12 of the same page and Figure 6 disclose that to identify different cooker types, temperature curves based on measurements at the cooker hood and the surface of the cooker are considered. Finally, lines 14 and 15 of the same page clarify that "*identifying the cooker type as such is not a primary objective, but rather identifying the thermal behaviour of the cooker*" (emphasis added) (see also page 8, lines 27 to 29).

The originally filed application discloses that the monitoring device comprises temperature sensors (7, 8) suitable for measuring the conditions on the surface of the cooker and above it (see page 6, lines 5 to 13).

The skilled person reading the originally filed application thus understands clearly and unambiguously from the document as a whole that since the monitoring device comprises the means necessary for the identification of the thermal behaviour of the cooker, since the monitoring device is decisive for the automatic learning (which is the main aim of the invention) and since the identification of the thermal behaviour of the cooker results in better parameters for the automatic learning, the monitoring device **can** be used for this identification. This does not mean that it is disclosed that the monitoring device **must** be used for this purpose but only that this alternative is implicitly disclosed in view of the common general knowledge of the skilled person and the content of the originally filed application as a whole.

1.4 Allegedly missing essential features from embodiments encompassed by claim 5

Feature e5 defines a monitoring device comprising **two or more** of the following sensors:

- a temperature sensor which measures radiation heat
- a temperature sensor which measures convection and/or conduction heat
- a humidity sensor
- a gas sensor
- a light sensor

The Board agrees that this definition encompasses embodiments in which the monitoring device comprises just one or no temperature sensor and that this is in contradiction with feature m5, which defines that the monitoring device is configured to identify and learn the thermal behaviour of the cooker on the basis of a

temperature difference between the surface of the cooker and a cooker hood as a function of time.

This is, however, an issue of lack of clarity (Article 84 EPC) since some essential features are possibly missing from embodiments encompassed by claim 5. However, clarity is not open to discussion in this case since **granted** claim 5 encompassed feature e5 and defined that the monitoring device was configured to identify and learn the "thermal behaviour on the basis of **temperature difference** between the cooker and a cooker hood". In other words, the lack of clarity does not arise from the post-grant amendments to claim 5 but was already present in the granted claim. Consequently, the Board has no power to examine the claim for compliance with Article 84 EPC for this lack of clarity (see G 3/14, Catchword).

Furthermore, the skilled person reading claim 5 would immediately recognise the contradiction inherent in embodiments of the monitoring device not comprising the necessary means to perform the function defined in feature m5 and would discard these when interpreting the claim in a way which makes technical sense.

Consequently, the subject-matter of claim 5 does not extend in this respect beyond the content of the original disclosure since the skilled person would not contemplate embodiments lacking the necessary means to perform the function defined in feature m5.

1.5 Allegedly non-working embodiments

The arguments of the appellant on possible non-working embodiments depending on circumstances such as the kind

of kitchen utensil used on the cooker or its content are not convincing.

What is relevant for added subject-matter is whether the claimed invention was disclosed in the originally filed application. The fact that an invention **which was originally disclosed** may not be sufficiently disclosed for the skilled person to carry it out is a different ground for opposition (Articles 83 and 100(b) EPC), one that has not been discussed before the opposition division.

Originally filed page 8, lines 27 to 34 and Figure 6 disclose that the *"thermal behaviour is easy to identify and learn on the basis of the temperature difference between the cooker and the cooker hood"* as a function of time. This is the basis for features m1, m5 and m6. Even if some essential information had been missing from the originally filed application to the extent that the skilled person would not be able to reproduce the invention, this would not result in the invention not having been originally disclosed.

Consequently, the alleged existence of non-working embodiments encompassed by claims 1, 5 and 6 does not result in an unallowable extension of the subject-matter beyond the original disclosure.

1.6 Objections by the opposition division

1.6.1 Feature m1 in connection with a method

According to the opposition division (see point 4.2 of the appealed decision), it could not be derived unambiguously from the patent application as a whole that the step of identifying and learning the thermal

behaviour of the cooker in feature m1 was actually performed during a **method** for monitoring the safe use of a cooker as defined in claim 1. Figure 6 was to be understood in this context as presenting background information, with the monitoring **device** being merely able to receive the information about the type of cooker to learn the safety limit values based on this information but without being configured to perform the step of identifying or learning the thermal behaviour of the cooker.

This is not persuasive.

The originally filed application concerns a method for monitoring the safe use of a cooker based on the automatic change or adjustment of stored safety limits (see e.g. page 1, line 3; page 3, lines 4 to 7 or claim 1).

Lines 7 and 8 of page 8 disclose that better parameters for learning can be obtained by identifying the cooker type as in Figure 6. However, lines 14 and 15 of the same page clarify that "*identifying the cooker type as such is not a primary objective, but rather identifying the thermal behaviour of the cooker*".

The skilled person understands from this that a method for monitoring the safe use of a cooker can involve the step of identifying the thermal behaviour of the cooker to obtain better parameters for learning since this automatic learning is at the core of the invention.

Thus, a method for monitoring the safe use of a cooker involving the step of identifying the thermal behaviour of the cooker is disclosed in the originally filed application such that this step does not result in an

extension of the subject-matter of claim 1 beyond the original disclosure.

1.6.2 Identification of the thermal behaviour as in features m1, m5 and m6

The opposition division considered that the identification of the thermal behaviour of the cooker on the basis of a temperature difference between the surface of the cooker and a cooker hood as a function of time was not derivable from the originally filed application. The passage from page 8, line 7 to page 9, line 4 did not disclose identification of the thermal behaviour of the cooker on the basis of the temperature difference as a function of time. It only described the identification of the **cooker type** based on a pre-determined thermal behaviour of the cooker, namely by deriving two temperature curves over time and identifying the cooker type on the basis of the temperature difference as a function of time from these curves.

This is not convincing for the following reasons.

Lines 7 and 8 of originally filed page 8 disclose that "[t]he graph of Figure 6 gives an example indicative of how different cooker types can be identified". The curves of Figure 6 are then explained in the same paragraph. They show "how the temperature curves of different cookers **differ** when the temperature is **measured from the cooker hood and on the surface of the cooker** when the cooker plate is switched on" (emphasis added).

Furthermore, it is disclosed immediately below that "[i]dentifying the cooker type as such is **not a primary**

objective, but rather identifying the thermal behaviour of the cooker" (emphasis added) (see page 8, lines 14 and 15).

Finally, page 8, lines 27 to 29 discloses that "[t]he graph [i.e. Figure 6] shows how the different cooker types differ from one another, whereupon their **thermal behaviour** is easy to identify and learn on the basis of the **temperature difference** between the cooker and the cooker hood" (emphasis added).

Figure 6 discloses two axes of coordinates for the curves, representing temperature vs time.

The skilled person thus learns that the variation over time of the temperatures on the surface of the cooker and the cooker hood (i.e. the variation of the difference between the two) provides information about the **thermal behaviour** of the cooker. The fact that this information can **also** be used to identify the type of cooker cannot change this.

Thus, the identification of the thermal behaviour of the cooker on the basis of a temperature difference between the surface of the cooker and a cooker hood as a function of time is originally disclosed.

1.7 Conclusion

In view of the foregoing, the main request complies with Article 123(2) EPC. Thus, the appeal is allowable.

2. Remittal - Article 111(1) EPC and 11 RPBA 2020

The contested decision only dealt with added subject-matter.

The grounds for opposition included objections based on an alleged lack of sufficiency of disclosure, novelty and inventive step.

It is the primary object of the appeal proceedings to review the decision under appeal in a judicial manner. This principle would not be observed if the Board were to examine compliance with Article 54, 56 and 83 EPC, for which no decision has been issued by the department of first instance. This constitutes "exceptional circumstances" within the meaning of Article 11 RPBA 2020.

Consequently, the Board remits the case in accordance with Articles 111(1) EPC and 11 RPBA 2020.

Order

For these reasons it is decided that:

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

The Registrar:

The Chairman:



C. Spira

C. Herberhold

Decision electronically authenticated