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Datasheet for the decision of 8 November 2022

Case Number: T 1428/19 - 3.2.03

Application Number: 12181945.2

Publication Number: 2703723

IPC: F24C3/12, F23N5/20

Language of the proceedings: EN

Title of invention:
Method of operating a gas burner of a cooking appliance

Patent Proprietor:
Electrolux Home Products Corporation N.V.

Opponent:
BSH Hausgeräte GmbH

Headword:

Relevant legal provisions:
EPC Art. 100(c), 123(2), 84, 54, 56
RPBA 2020 Art. 13(2)
RPBA Art. 12(4)

Keyword:
Admissibility of opposition
Grounds for opposition - fresh ground for opposition (yes)
Novelty - main request (no) - auxiliary request 3 (yes)
Late-filed request - request not examined by the opposition division
Amendments - allowable (no) - auxiliary requests 1, 1a, 2, 2a - added subject-matter (no) - auxiliary request 3
Amendment after summons - taken into account (no) - auxiliary requests 1a, 2a
Claims - clarity after amendment (yes) - auxiliary request 3
Inventive step - non-obvious solution - auxiliary request 3

Decisions cited:
G 0009/91, G 0010/91, G 0003/14, T 1520/19

Catchword:

Europäisches Patentamt
European Patent Office
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Beschwerdekammern

Boards of Appeal

Chambres de recours

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

Case Number: T 1428/19 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 8 November 2022

Appellant: (Patent Proprietor)	Electrolux Home Products Corporation N.V. Raketstraat 40 1130 Brussels (BE)
Representative:	Schröer, Gernot H. Meissner Bolte Patentanwälte Rechtsanwälte Partnerschaft mbB Bankgasse 3 90402 Nürnberg (DE)
Appellant: (Opponent)	BSH Hausgeräte GmbH Carl-Wery-Strasse 34 81739 München (DE)
Representative:	Lang, Michael BSH Hausgeräte GmbH Zentralabteilung Gewerblicher Rechtsschutz Carl-Wery-Str. 34 81739 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 11 March 2019 concerning maintenance of the European Patent No. 2703723 in amended form.**

Composition of the Board:

Chairman	C. Herberhold
Members:	B. Miller
	F. Bostedt

Summary of Facts and Submissions

I. European patent No. 2 703 723 B1 ("the patent") relates to a method of operating a gas burner of a gas cooking appliance.

II. An opposition was filed against the patent, based on the grounds of Article 100(a) EPC together with both Articles 54 and 56 EPC.
In the interlocutory decision the opposition division found that the patent met the requirements of the EPC, based on the claims of auxiliary request 1 submitted during the oral proceedings on 29 January 2019.

The interlocutory decision was appealed by both parties. As the patent proprietor and the opponent are both appellants and respondents in the appeal proceedings, for the sake of simplicity the board will continue to refer to the parties as the patent proprietor and the opponent in the present decision.

III. Prior art

The following documents of the opposition proceedings are referred to:

E2: JP2006-308228 A
E2": Translation of E2 into German
E3': EP 1 528 326 A2
E7: JP 2003-222327 A
E7": Machine translation of E7 into English

IV. Oral proceedings were held on 8 November 2022 and were attended by both parties.

V. At the end of the oral proceedings, the following requests were confirmed by the parties:

The patent proprietor requested that the decision under appeal be set aside and that the opposition be rejected as inadmissible or at least unfounded. In the alternative, it requested that the patent be maintained in amended form on the basis of one of auxiliary requests 1, 2 or 4 as submitted with the statement setting out the grounds of appeal dated 18 July 2019, or on the basis of auxiliary requests 1a or 2a as submitted with the letter dated 14 June 2022.
As auxiliary request 3, the proprietor requested maintenance in the form found allowable by the opposition division (i.e. the set of claims filed as "new auxiliary request 1" during the oral proceedings before the opposition division).

The opponent requested that the decision under appeal be set aside and that the patent be revoked.

VI. Wording of the independent claims

(a) Main request (claims as granted)

Claim 1 reads:

"Method of operating a gas burner (2, 3) of a gas cooking appliance (1) wherein the gas burner (2, 3) comprises a safety valve (7) for closing and opening gas supply to the gas burner (2, 3) and a step valve (8) for setting a gas flow rate to the gas burner (2, 3), **characterized in that**
a shut-off (14, 19) of the gas burner (2, 3) comprises closing the safety valve (7) while leaving the step

valve (8) open for a predetermined period of time from complete closure of the safety valve (7)."

Claim 14 reads:

"A gas cooking appliance (1) comprising at least one gas burner (2, 3) and a control unit (9) adapted to control the gas burner (2, 3) according to a method of at least one of claims 1 to 13."

(b) Auxiliary request 1

Claim 1 corresponds to claim 1 of the main request wherein the following feature has been added at the end of the claim wording:

"wherein the safety valve (7) is closed and then, after the predetermined period of time, the step valve (8) is gradually transferred to the closed state."

The wording of claim 14 corresponds to the wording of claim 14 of the main request.

(c) Auxiliary request 2

Claim 1 is based on claim 1 of auxiliary request 1 wherein the characterising portion reads (amendments annotated in bold by the board):

"a **final** shut-off (14, 19) of the gas burner (2, 3) **after an operational phase** comprises closing the safety valve (7) while ~~**leaving**~~ the step valve (8) **is left** open **at a constant size of opening** for a predetermined period of time from complete closure of the safety valve (7), ..."

The wording of claim 11 corresponds to the wording of claim 14 of the main request with the back-references adapted accordingly.

(d) Auxiliary requests 1a and 2a

Auxiliary requests 1a and 2a correspond to auxiliary requests 1 and 2 wherein dependent claim 2 has been deleted.

(e) Auxiliary request 3 (corresponds to auxiliary request 1 considered allowable by the opposition division in the contested decision)

Claim 1 reads (amendments annotated in bold by the board):

"Method of operating a gas burner (2, 3) of a gas cooking appliance (1) wherein the gas burner (2, 3) comprises a safety valve (7) for closing and opening gas supply to the gas burner (2, 3) and a step valve (8) for setting a gas flow rate to the gas burner (2, 3), **wherein** a shut-off (14, 19) of the gas burner (2, 3) comprises closing the safety valve (7) while leaving the step valve (8) open for a predetermined period of time from complete closure of the safety valve (7), **wherein the shut-off (14) represents a final shut-off after a continuous operational phase, and wherein upon complete closure of the safety valve (7), the step valve (8) is gradually transferred to the closed state, with an idle time (20) of predetermined duration of the step valve (8) being provided between complete closure of the safety valve (7) and start of transfer to the closed state.**"

The wording of claim 7 corresponds to the wording of claim 14 of the main request (back-references adapted accordingly).

(f) Auxiliary request 4

The further auxiliary request 4 is not relevant to this decision. Its wording can therefore be left out of consideration.

VII. The arguments of the patent proprietor, as far as relevant to this decision, can be summarised as follows:

(a) Admissibility of the opposition

The opposition was inadmissible, since
i) all grounds raised by the opponent were in fact a hidden attack for lack of clarity,
ii) the opponent had failed to define the person skilled in the art.

(b) Admittance of the ground for opposition under Article 100(c) EPC

The ground for opposition under Article 100(c) EPC had not been raised within the nine-month opposition period and had not been admitted in opposition proceedings. Hence it should not be discussed in appeal proceedings.

(c) Novelty in regard to E2 - main request

The valve of E2 included a rotatable plate with several openings, wherein the plate could be rotated continuously to bring the holes into alignment with corresponding holes in the valve body. Hence E2 did not disclose a step valve as required by claim 1.

Moreover, the interpretation of the feature "predetermined period of time" as relied on in the contested decision was wrong since it included the possibility that the step valve remained open.

Claim 1 defined a method according to which both the safety valve and the step valve were to be closed in a specific sequence. It followed inherently from the expression "leaving the valve open for a predetermined period of time" that the valve was fully closed after a specific period of time, and excluded the case that the valve was left open for an undetermined period of time.

(d) Auxiliary requests 1 and 2

Although the auxiliary requests filed in opposition proceedings had been renumbered, auxiliary requests 1 and 2 had been submitted in opposition proceedings and had never been withdrawn. Hence they should be considered in the appeal proceedings.

The amendments in claim 1 of auxiliary requests 1 and 2 were based on page 4, lines 9 to 16 of the application as filed.

(e) Auxiliary requests 1a and 2a

Auxiliary requests 1a and 2a had been filed in reaction to the objections under Article 84 EPC raised by the board in the communication pursuant to Articles 15(1) and 17(2) RPBA 2020. Hence the requests should be taken into account in the appeal proceedings.

(f) Auxiliary request 3 - admittance

Auxiliary request 3 corresponded to the set of claims in accordance with the "new auxiliary request 1" that had been filed during the oral proceedings before the opposition division. The opposition division had made correct use of its discretion when admitting the request.

As auxiliary request 3 corresponded to auxiliary request 1 underlying the contested decision, the request was to be considered in the appeal proceedings.

(g) Auxiliary request 3 - Article 123(2) EPC

The application as filed disclosed that the gas burner could be operated in a continuous operational mode. The features relating to the idle time were based on claim 2 as originally filed.

(h) Auxiliary request 3 - Article 84 EPC

Claim 7 as granted referred to a "continuous mode" as opposed to an "intermittent mode" referred to in claim 3 as granted. Likewise, claim 1 as granted referred to "a predetermined period of time". Since the meaning of these expressions was not changed by the amendments to the claims as granted, their clarity

could not be discussed in appeal proceedings, in line with G 3/14.

The meaning of the expression "idle time of predetermined duration" was clear in the context of claim 1, which was not rendered unclear by the amendments.

(i) Auxiliary request 3 - novelty

None of documents E2, E3' and E7 disclosed a process for operating a gas burner wherein after the closure of the safety valve a step valve was transferred to a closed state only after an idle time.

E2 described that the step valve was closed directly after closure of the safety valve. Therefore E2 did not disclose an idle time as required by claim 1.

E7 disclosed that the step valve was left open after the safety valve was closed. Hence E7 did not disclose that the step valve was closed after an idle time as required by claim 1.

E3' disclosed a continuous valve and not a step valve as required by claim 1. During use of the gas burner of E3' the user decided when to close the heat regulating valve. Hence E3' did not disclose that the step valve was closed after an idle time of predetermined duration as required by claim 1.

(j) Auxiliary request 3 - inventive step

Starting from E2 or E7, the patent solved the objective technical problem of providing a process for operating a gas burner which contributed to reducing wear of the

step valve while maintaining safety. This was true even if the idle time was only very short.

None of the cited documents gave any indication that closing the step valve only after an idle time of predetermined duration contributed to reducing wear of the step valve.

In the absence of any motivation or indication, it was neither obvious to replace the continuous heat regulating valve by a step valve in the gas burner of E3' nor to change the operational mode by setting a predetermined idle time before starting to close the heat regulating valve.

VIII. The respective arguments of the opponent can be summarised as follows:

(a) Admissibility of the opposition

The opposition was admissible since it was based on a ground for opposition pursuant to Article 100(a) EPC. Interpreting the claim wording in the course of a novelty attack was not a mere clarity objection.

(b) Admittance of the ground of opposition under Article 100(c) EPC

Although the ground of opposition under Article 100(c) EPC against the main request had in the end not turned out to be relevant to the final decision, it had been raised explicitly in opposition proceedings - provided it became relevant to the decision - and should be admitted in the appeal proceedings as it was *prima facie* relevant.

(c) Novelty in regard to E2

E2 disclosed a heat regulating valve operated by a stepper motor. Hence E2 disclosed a step valve. The step valve of E2 was transferred slowly to a standby position once the safety valve was shut off. The closing step according to E2 took place over a predetermined period of time.

Claim 1 did not define a process for operating a gas burner according to which the step valve was to be closed, but rather defined a "predetermined period of time" in which the step valve was left open.

Further, claim 1 did not define how the "predetermined period of time" was to be set. Hence the predetermined period of time in which the step valve was left open could well result from a slow driving mechanism of the valve.

(d) Auxiliary requests 1 and 2

Auxiliary requests 1 and 2 should not be admitted into the proceedings. These requests were based on requests which had been filed in opposition proceedings but which - due to reordering of the requests - had not been decided upon by the opposition division. The patent proprietor was not at liberty to choose which request was to be analysed in which instance. Moreover, the amendments in these requests gave rise to new objections under Articles 84 and 123(2) EPC.

(e) Admittance of auxiliary requests 1a and 2a

Auxiliary requests 1a and 2a were filed only after receipt of the summons to attend oral proceedings

before the board. The requests *prima facie* gave rise to the same objections under Article 123(2) EPC as auxiliary requests 1 and 2. Therefore they should not be admitted into the proceedings.

(f) Auxiliary request 3 - admittance

Auxiliary request 3 corresponded to the set of claims that had been filed as "new auxiliary request 1" during the oral proceedings before the opposition division. By admitting this late-filed request, the opposition division had committed a procedural violation.

Moreover, when filing auxiliary request 3 the opponent had not yet submitted its statement setting out the grounds of appeal. Hence there had been no need to file this request at that point in time.

(g) Auxiliary request 3 - Article 123(2) EPC

The application described a continuous mode but did not provide a teaching for a "continuous operational phase" as defined in claim 1. The amendments according to auxiliary request 3 therefore did not comply with the requirements of Article 123(2) EPC.

The interpretation of the expression "predetermined period of time" adopted by the opposition division contravened the requirements of Article 123(2) EPC.

(h) Auxiliary request 3 - Article 84 EPC

The meaning of the expression "continuous mode" in claim 1 was undefined and thus not clear.

It was not clear whether the expressions "predetermined period of time" and "predetermined duration of time" in claim 1 had the same meaning.

Furthermore, the method of claim 1 was not clear since it was dependent on the subjective evaluation of the behaviour of the user of the gas burner.

(i) Auxiliary request 3 - novelty

In the method of E2 an idle time of very short, predetermined duration between the closure of the safety valve and the start of transfer to the closed state of the step valve was unavoidable, since there was always a marginal delay between two current pulses driving an electric motor. Furthermore, the step valve of E2 was moved to a standby position and hence was transferred to its "closed position".

E7 disclosed a step valve which was closed after shut-off of the safety valve. Like the argument based on E2, a very short idle time between the closure of the safety valve and the start of closure of the step valve was unavoidable.

The continuously operating heat regulating valve according to E3' was at least suitable as a step valve within the meaning of claim 1 since it was operated by an electric motor. In the operating method according to E3' there was an idle time between the shut-off of the safety valve and the start of closure of the heat regulating valve by the user. The idle time had a predetermined period since the user decided when to start to close the heat regulating valve.

Documents E2, E3' and E7 therefore disclosed a method for operating a gas burner, wherein after the closure of the safety valve the transfer to the closed state of a step valve was started after an idle time as required by claim 1.

(j) Auxiliary request 3 - inventive step

Claim 1 did not define the duration of the idle time. Keeping the step valve in an open position for an idle time of arbitrarily short period after the closure of the safety valve did not contribute to reducing the wear of the step valve. The alleged technical effect was thus not credible over the full range claimed. Moreover, since claim 1 is a method claim, the user interaction underlying the alleged technical effect had to be incorporated as an explicit method step. Otherwise the effect could not be acknowledged.

Starting from E2 or E7, the patent thus only solved the objective technical problem of providing an alternative method for operating a gas burner.

Using a short idle time before starting the closing process of the step valve constituted an obvious modification of the process known from each of E2 and E7.

Starting from E3', it was obvious to replace the continuous valve by a step valve. In the method of operating the gas burner of E3' the shut-off of the heat regulating valve was started only after an idle time, since the user of the gas cooking appliance had to react to the LED signal indicating the shut-off of the safety valve. Setting a predetermined period for

this idle time was an obvious modification for the skilled person.

Reasons for the Decision

1. Admissibility of the opposition

1.1 The patent proprietor disputes the admissibility of the opposition and argues that

i) all the grounds raised by the opponent are in fact a hidden attack for lack of clarity,

ii) the opponent had failed to define the person skilled in the art.

These arguments are not convincing.

1.2 Argument in relation to "hidden clarity attack"

In the notice of opposition, the opponent sets out that the subject-matter of claim 1 as granted lacked novelty and inventive step. Relevant evidence was filed with and discussed in the notice of opposition.

Hence the opposition was based on the grounds for opposition pursuant to Article 100(a) EPC, and was sufficiently substantiated, as required by Articles 99(1) and 100 EPC and Rule 76(1) and (2) EPC.

In the context of the objections raised with regard to novelty and inventive step, the wording of the claims as granted was interpreted in the notice of opposition, see in particular points 4.1.2-4.1.12 and 4.2.1-4.2.3 of the notice of opposition.

Interpretation of the claim wording and in particular of the individual terms and expressions used therein is required in order to evaluate novelty and inventive step. Whether the opponent makes use of the same interpretation as that proposed by the patent proprietor and as adopted by the opposition division might have an influence on the success of the opposition, but plays no role in assessing the admissibility of the opposition.

As stated by the Enlarged Board of Appeal in G 3/14 (point 55 of the reasons),

> "*... a granted claim may turn out not to comply with Article 84 EPC but such non-compliance must be lived with. However, any lack of clarity of the claims may still be highly relevant in opposition proceedings in that it can influence the decisions on issues under Article 100 EPC: see T 127/85 (OJ EPO 1989, 271), Headnote and point 2.1 of the Reasons. For example the lack of clarity of a claim may have a profound effect on the outcome of the grounds for opposition according to ...*
>
> *ii) Article 100(a) EPC / novelty (see, e.g., T 57/94, point 2.1 of the Reasons; T 525/90, point 2.1 of the Reasons; T 892/90, point 2 of the Reasons; T 617/92, point 2.2 of the Reasons), or Article 100(a) EPC / inventive step (see, e.g., T 892/90)*"

Hence the opposition is not merely based on a "hidden" clarity objection, but is based on the grounds for opposition pursuant to Article 100(a) EPC.

1.3 Argument based on the missing definition of the skilled person

Under the EPC, defining the skilled person is not a requirement for admissibility of an opposition.

Indeed, in proceedings before the EPO the skilled person may even be left undefined as long as their skills and knowledge are implied by the circumstances, or the reasoning provided (see e.g. T1520/19, point 7.1 of the Reasons).

The mere fact that the skilled person was not defined in the notice of opposition therefore does not render the opposition inadmissible.

1.4 In conclusion, the board agrees with the finding in paragraphs 11 to 18 of the contested decision that the opposition is admissible.

2. Main request - Article 100(c) EPC

The ground for opposition pursuant to Article 100(c) EPC was not raised in the notice of opposition and was not raised unconditionally when allowability of the main request was discussed during the opposition proceedings, see point 3.6 of the minutes of the oral proceedings before the opposition division and point 3.4 of the communication of the opposition division dated 3 July 2019 (in reply to a request for correction of the minutes of the oral proceedings). These passages are in accordance with the opponent's own statement in

the submission dated 20.11.2019 according to which the objection under Article 100(c) EPC - **provided it was relevant to the decision** - had been raised immediately (page 6, last sentence).

As the main request was considered not novel (minutes, point 7.1), the conditionally raised objection under Article 100(c) EPC against the main request concerning the omission of the term "at least" did not become relevant to the decision and consequently was not introduced into the proceedings.

The objection concerning the omission of the term "at least" against the patent as granted thus constitutes a new ground for opposition pursuant to Article 100(c) EPC. In the absence of any agreement by the patent proprietor, a new ground of opposition - relevant or not - cannot be considered in view of the principles developed in G 9/91 and G 10/91.

3. Main request - novelty

3.1 E2 (in the following, reference is made to its translation E2") discloses a method of operating a gas burner (Figure 2, burners 11-14) of a gas cooking appliance. The gas burner comprises a safety valve (21) for closing and opening the gas supply to the gas burner and a valve (22) for setting a gas flow rate to the gas burner (see claim 1).

E2" describes on page 2, lines 9 to 11 that in the event of a manual shut-off the safety valve (21) is closed before the degree of opening of the valve (22) is changed. As explained in detail in paragraphs [0011] and [0031] of E2", once the safety valve (21) has been closed the degree of opening provided by valve (22) is

reduced at a lower speed in order to save electricity. Valve (22) is moved by using a stepper motor (see paragraph [0021]).

According to paragraph [0031] of E2" the valve (22) is moved back to and remains in a standby position after the shut-off routine.

3.2 The patent proprietor argues that valve (22) of E2" is not a step valve in accordance with claim 1.

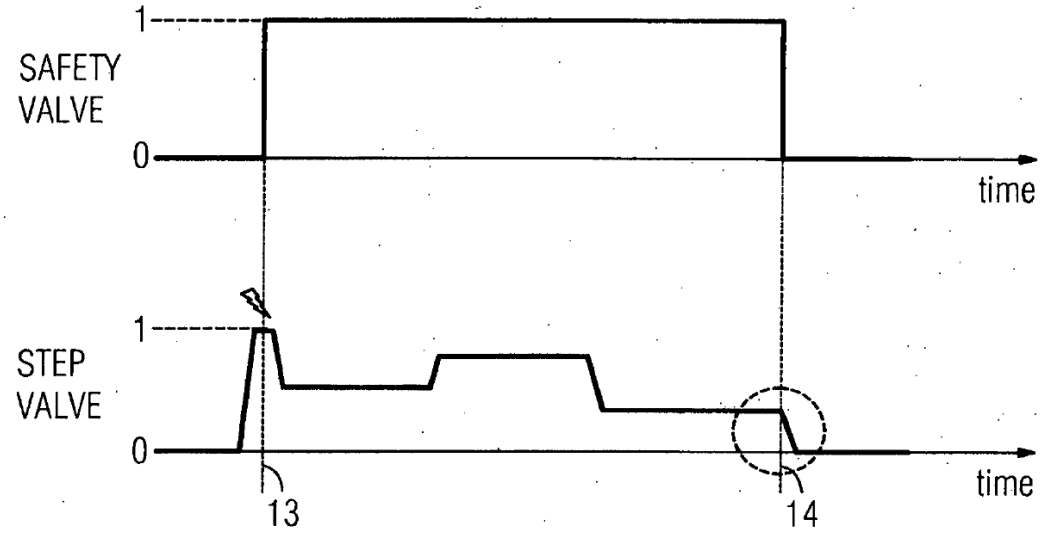
This argument is not convincing.

Valve (22) of E2" includes a plate with several gas passage holes (91), wherein the plate can be rotated to bring the holes (91) into alignment with a corresponding valve opening hole (81) of the valve body (see figures 3, 4 and paragraphs [0026] - [0027] of E2"). By rotating the plate, the cross-section through which the gas can flow is increased or decreased. This operation is conducted via a stepper motor.

The combination of valve (22) with the stepper motor provides a stepwise modulation of the gas flow through rotation of the plate (8), see page 7, line 37 to page 8, line 6 of E2". Hence valve (22) is opened stepwise by the stepper motor. Accordingly, figure 1 of E2 symbolises steps at the control knobs (16).

During the rotating of the plate, the cross-section through which the gas can flow might change continuously, as argued by the patent proprietor. However, the same working principle is illustrated for a step valve by the figures of the patent, see for example figure 5:

FIG 5



The sloping line representing the gas flow during a change of step demonstrated in figure 5 illustrates that the gas flow of the step valve changes continuously from one level to the next level, contrary to the gas flow characteristic provided by the safety valve.

Hence valve (22) of E2" can be considered a step valve within the meaning of the patent.

3.3 The patent proprietor further argues that the time between the closure of the safety valve (21) and the finalised movement of valve (22) into its standby position cannot be considered as a predetermined period of time.

This argument is not convincing either.

The board agrees with the finding of the opposition division in paragraph 34 that the expression "predetermined period of time" is not equivalent to the "idle time" during which the position of the step valve remains unchanged, i.e. the stepper motor of the valve

is not actuated (see also the discussion in point 4.3 below) (however, if the idle time is present, the predetermined period of time may comprise the idle time). Also, the time needed to gradually reduce the degree of opening of the step valve is a predetermined period of time within the meaning of the patent in which the valve is still open. The time required to close the step valve is predetermined by the predetermined speed of the stepper motor and the predetermined size of the opening holes in the valve body and the rotating opening and closing plate.

This interpretation is confirmed by the embodiments of the claimed method illustrated in figures 5 to 8 of the patent, according to which the safety valve is instantaneously (i.e. without an idle time) closed at the moment of a final shut-off (14), while the step valve is gradually closed as illustrated by the sloping line in the figures of the patent, see for example figure 5 in the point above.

Hence the scenario described in E2 corresponds to the graphs which indicate the degree of opening of the step valve over time according to figures 5 to 8 of the patent.

3.4 The patent proprietor further argues that E2 does not disclose that the step valve is closed, i.e. fully inhibits the flow of gas after the closing step. In its view, the process according to claim 1 differs in this regard since the expression "open for a predetermined period of time" in claim 1 inherently requires the step valve to be fully closed.

The board is not convinced by this further argument either.

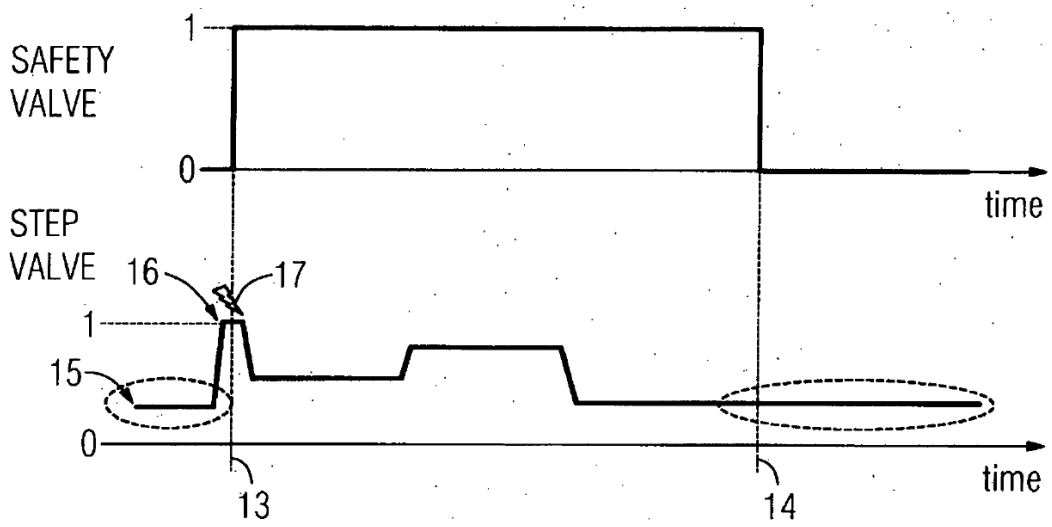
The method defined by claim 1 of the patent does not define that the step valve has to be closed, i.e. transferred into a state in which no gas flow is possible.

Claim 1 only requires that the valve be left open for a certain time. Hence claim 1 defines a minimum opening time. Whether or not the valve is closed after the "predetermined period of time" or instead e.g. remains in a standby position is not defined in claim 1.

This interpretation of claim 1 is in line with the teaching of the patent as a whole and in particular with the embodiments described therein.

Figure 2, see below, demonstrates in combination with the teaching in paragraph [0050] that the step valve can indeed remain open after the final shut-off by the safety valve.

FIG 2



A similar disclosure is provided in figure 3 in combination with paragraphs [0056] and [0057] of the patent.

The teaching provided by the embodiments according to figures 2 and 3 corresponds to the general statements in paragraph [0010]: "*In particular, the step valve can be kept at a constant opening status until a subsequent start-up has to be carries* [sic] *out*",
in paragraph [0011]: "*The fact that the step valve,* ***if at all,*** *can be moved comparatively slowly may contribute to reduced wear*" (emphasis added by the board) and
paragraph [0012]: "*With the proposed method, gas shut-off and start-up generally is controlled exclusively by the safety valve, which in general is less prone to wear.*"

According to E2, the step valve is transferred back ("**zurück**geführt") from a more open ("...kommte es vor, dass zum Löschzeitpunkt der Öffnungsgrad des Wärmeleistungsregulierers 22 **noch** auf ...grosser Flamme steht") into a more closed (yet not fully closed) standby position after the shut-off of the safety valve, see paragraph [0032]. This therefore meets the requirements of claim 1 with regard to the feature "open for a predetermined period of time".

3.5 Since none of the patent proprietor's arguments are convincing, the board has no reason to deviate from the finding in paragraphs 29 to 35 of the contested decision, that the subject-matter of claim 1 lacks novelty over E2.

4. Admittance of auxiliary requests 1 and 2

4.1 Auxiliary request 1 corresponds to auxiliary request 2 as submitted in opposition proceedings with the reply to the opposition (dated 28 December 2017). Auxiliary request 2 corresponds to a large extent to auxiliary request 9 as pending during the written procedure of the opposition proceedings.

During the oral proceedings before the opposition division, the patent proprietor decided to change the order of the auxiliary requests and to pursue the claims according to the present (narrower) auxiliary request 3 as the first auxiliary request during the oral proceedings before the opposition division, see point 7.3 of the minutes. Hence there was no need for the opposition division to take a decision on the other pending auxiliary requests.

4.2 Considering auxiliary requests 1 and 2 in favour of the patent proprietor (Article 12(4) RPBA 2007), these requests are nevertheless not allowable because they do not meet the requirements of Article 123(2) EPC.

4.3 Due to the amendments in claim 1, the meaning of the expression "predetermined period of time" in claim 1 of auxiliary request 1 has changed. According to claim 1 as filed (and correspondingly claim 1 as granted), the expression "predetermined period of time" refers to the "complete time between the closure of the safety valve up to the full closure of the step valve" and therefore includes the optional idle time.

Due to the amendments, the expression "predetermined period of time" in claim 1 of auxiliary request 1 refers to the "time between the closure of the safety

valve up to the point of time at which the closing process of the step valve starts". Hence in the amended wording the expression "predetermined period of time" is identical to the idle time as defined in claim 2 as originally filed (and correspondingly claim 2 as granted).

There is no disclosure in the application as filed for this change of meaning of the expression "predetermined period of time". In particular the paragraph on page 4, lines 9 to 16 of the application, which was referred to by the patent proprietor, does not provide the necessary basis. In this paragraph on page 4, the application as filed only describes that according to the method of the invention in a first step the safety valve closes and in a second step the step valve closes. However, it does not disclose a "predetermined period of time" or "idle time" or their relationship to each other.

4.4 Hence the subject-matter of claim 1 of auxiliary request 1 does not meet the requirements of Article 123(2) EPC. Auxiliary request 1 is therefore not allowable.

4.5 Claim 1 of auxiliary request 2 comprises the same amendments as discussed above in the context of claim 1 of auxiliary request 1. Hence auxiliary request 2 is not allowable for the same reasons.

5. Admittance of auxiliary requests 1a and 2a

Auxiliary requests 1a and 2a were filed after notification of the summons to attend oral proceedings before the board. Their admittance therefore falls

within the discretion of the board pursuant to Article 13(2) RPBA 2020.

Claim 1 of auxiliary requests 1a and 2a comprises the same amendments as discussed above in the context of claim 1 of auxiliary request 1.

It follows that auxiliary requests 1a and 2a *prima facie* do not meet the requirements of Article 123(2) EPC.

Hence the board did not take these requests into account pursuant to Article 13(2) RPBA 2020.

6. Admittance of auxiliary request 3

6.1 Auxiliary request 3 corresponds to auxiliary request 1 on which the contested decision is based and which had been filed during the oral proceedings before the opposition division as "new auxiliary request 1".

6.2 The opponent was of the opinion that the opposition division had committed a procedural violation by admitting this late-filed request.

The opposition division admitted the late-filed request into the opposition proceedings by exercising its discretion under Article 114 EPC and Article 123(1) together with Rule 116(2) EPC. In exercising its discretion the opposition division applied appropriate criteria when evaluating whether the new request was an appropriate reaction in response to the course of the opposition proceedings, gave rise to new objections, and was potentially suitable to overcome the outstanding objections, see paragraph 38 of the contested decision.

Moreover, the admittance of new auxiliary request 1 was discussed with the parties during the oral proceedings, see points 7.4 and 7.5 of the minutes.

The opponent has failed to demonstrate that the opposition division exercised its discretion incorrectly or that it committed a procedural violation when admitting the request.

6.3 The opponent further took the view that auxiliary request 3 should not be admitted into the appeal proceedings since the patent proprietor at the time of its filing in the appeal phase, i.e. with the statement setting out the grounds of appeal, had no reason to file it.

However, auxiliary request 3 corresponds to auxiliary request 1 on which the contested decision is based. The request is thus equivalent to a request to dismiss the opponents' appeal. The board therefore, in general, has no discretion under Article 12(4) RPBA 2007 concerning its exclusion from the proceedings. Moreover, its filing by the patent proprietor already with its statement setting out the grounds of appeal is an adequate reaction of the patent proprietor to the appeal initiated by the opponent when it filed a notice of appeal.

Hence the board sees no reason why auxiliary request 3 should not be considered in appeal proceedings.

7. Auxiliary request 3 - Article 123(2) EPC

7.1 Claim 1 is based on claims 1 and 2 as filed wherein the "operational phase" addressed in claim 2 as filed has

been specified as being "a continuous operational phase" in line with the teaching on page 3, lines 26 to 32 of the application as filed.

7.2 The opponent argues that defining the operational phase as being "continuous" contravenes the requirements of Article 123(2) EPC. In its view, page 3, last paragraph of the application describes a "continuous mode" but does not provide a teaching for a "continuous operational phase" as defined in claim 1.

This argument is not convincing.

The application as filed discloses on page 3, lines 26 to 32 that the "operational phase or an operational cycle of the gas burner may be a continuous or intermittent phase of the gas burner."

The application as filed thus presents two possible modes for the operational phase. Selecting one of the two alternatives does not generate a new technical teaching. Moreover, it is clear from the teaching on page 3 of the application as filed that the subsequently described "continuous mode" of the gas burner is nothing other than a description of "a continuous operational phase" in this context. Hence it becomes clear from the context of the application that the expressions "continuous mode" and "continuous operational phase" are used as synonyms and refer to a gas burner receiving a continuous (uninterrupted) gas flow when the step valve is open.

Therefore the specification of the operational phase as being "continuous" does not generate a teaching which goes beyond the application as filed.

7.3 The opponent further argues that the meaning of "predetermined period of time" has changed due to the amendments in claim 1 and in view of the interpretation of the opposition division.

However, claim 1 does not specify that the predetermined period of time for leaving the step valve (8) open from complete closure of the safety valve (7) is the same as the idle time (20). Claim 1, rather, defines the idle time as the duration from the closure of the safety valve to the point in time when the process of closing the step valve is started. Hence the predetermined period of time for leaving the step valve open encompasses the idle time as defined in claims 1 and 2 as filed.

It follows that the meaning of the expression "predetermined period of time" in claim 1 corresponds to the meaning provided by the application as filed.

The requirements of Article 123(2) EPC refer to the teaching of the application as filed. Whether the opposition division adopted a new interpretation of an amended claim wording is not relevant in this regard, contrary to the opponent's argument.

7.4 The board therefore confirms the finding in paragraphs 43 to 45 of the contested decision that the amendments in auxiliary request 3 meet the requirements of Article 123(2) EPC.

8. Auxiliary request 3 - Article 84, second sentence, EPC

As indicated above, it is clear to the skilled person that the expressions "continuous mode" and "continuous operational phase" are synonyms in the technical

context of the patent and both refer to a gas burner receiving a continuous gas flow while the step valve is open.

The expressions "operational phase", "predetermined period of time" and "predetermined duration of time" have been used in the claims as granted. Hence the clarity of these terms cannot be discussed in *inter partes* appeal proceedings, in accordance with the principles confirmed by G 3/14. Combining the wording of claims 1 and 2 as granted (with claim 2 as granted having been dependant on claim 1 as granted) does not change this analysis.

The board therefore confirms the finding in paragraphs 39 to 42 of the contested decision that the amendments to the wording of claim 1 in accordance with auxiliary request 3 do not render the claimed subject-matter unclear (Article 84, second sentence, EPC).

9. Auxiliary request 3 - Article 54 EPC

9.1 E2/E2"

9.1.1 E2" discloses that after closing the safety valve (21) the control unit sends pulses to the stepper motor to move valve (22) (see paragraph [0021]). The degree of opening provided by valve (22) is thereby reduced (see paragraph [0011]) and valve (22) moves into a standby position (see paragraphs [0031] and [0032]).

9.1.2 The opponent argues that E2" inherently discloses that the start of transfer to the closed state is delayed by an idle time of predetermined duration. In its view, an idle time according to claim 1 can be any arbitrarily short, predetermined time period. A very short idle

time was unavoidable in the method of E2", since there was a marginal delay between two current pulses supplied from a control unit of E2" to drive the electric stepper motor.

This argument is not convincing.

Although the length of the idle time is not defined in claim 1, a skilled person would not understand the expression "idle time" to refer to an infinitesimally short period, such as the unavoidable delay generated by an electronic component, e.g. the unavoidable period of time between two current pulses.

An idle time within the meaning of claim 1 is instead a period of time which is provided in addition to the unavoidable delays of electronic control units (which also implies that it is not zero). E2" does not provide any disclosure in this regard.

9.1.3 The opponent further argues that the step valve of E2" is inherently transferred to the closed state. On the one hand, the step valve is transferred to a standby position, i.e. its closed position. On the other hand, the valve is also inherently closed during the rotational movement of the opening and closing plate (8) once none of the gas passage holes (91) coincide with the valve opening hole (81).

This argument is not convincing either.

Contrary to claim 1 of the main request, claim 1 of auxiliary request 3 explicitly requires that the step valve be transferred to the closed state. The closed state of a valve implies that no gas flow is possible. This is not the case according to E2" since the step

valve (22) is transferred into a standby position which allows ignition of the gas, see paragraph [0032] of E2". The standby position disclosed in E2" is therefore not a closed state as required by claim 1.

A closed state of the step valve (22) is not directly and unambiguously achieved during the transfer of the step valve into the standby position either.
E2" discloses in paragraph [0027] in combination with figures 3 and 4 that the gas flow is controlled by rotating the opening and closing plate (8) and by bringing the valve opening hole (81) into line with one of the gas passage holes (91). However, it is not directly and unambiguously disclosed in E2" that the distance between the gas passage holes (91) on the one hand and the size of the valve opening hole (81) on the other hand are suitable to provide complete closure of the valve opening hole (81) during the use of the step valve. Complete closure of the valve opening hole (81) during the rotation of the opening plate is not an expected result in this context. On the contrary, a certain amount of gas flow needs to be maintained during the adjustment of the heat while turning the step valve in order to avoid the gas burner shutting off during step valve adjustment (a typical example of such a valve arrangement can be seen in Figure 4 of E7, see also the discussion below).

Therefore the board concludes that the subject-matter of claim 1 differs from the method of E2 in that the step valve starts to close only after an idle time and in that it is finally closed.

9.2 E7

E7 discloses a process for operating a gas burner comprising an electromagnetic main valve (3) in the main pipe, electromagnetic valves (6a, 6b, 6c) and gas flow control valves (5a, 5b, 5c) in the branch pipes, see figure 2 of E7.

The gas flow control valves (5a, 5b, 5c) according to E7 comprise rotational plates with holes of different size (figure 4 of E7), which are driven by a stepper motor, see paragraph [0026] of E7". Hence E7 discloses a step valve within the meaning of the patent.

The gas flow in the main pipe is interrupted by the main valve (3). The gas flow for each burner is further controlled by electromagnetic valves (6a, 6b, 6c), see paragraph [0028] of E7". According to paragraph [0029] of E7", the gas flow control valve is moved from a closed position to an ignition position during the ignition operation. It can thus be concluded that E7 also discloses the possibility that the step valve is transferred to a closed state.

However, E7 does not disclose that during the shut-off operation the gas flow control valve is closed only after an idle time within the meaning of claim 1.

Therefore the subject-matter of claim 1 is novel over E7.

9.3 E3'

9.3.1 E3' describes a process for operating a gas burner, according to which extinction of the flame results in an automated closure of a main valve (37), wherein the

control valve (45) remains open until subsequent user interaction, see paragraphs [0014] and [0015] of E3'.

Although there is an idle time between closure of the main valve (37) and the heat regulating valves (13, 15, 17), this idle time is not a predetermined period of time as defined in claim 1 since the idle time depends on the behaviour of the user of the gas cooking appliance of E3'.

Moreover, E3' discloses a continuously working heat regulating valve, see figure 3. In contrast, claim 1 refers to an operating method for a gas burner with a step valve.

Although a continuous valve may be seen, in an abstract sense, to have two steps ("on" and "off"), it is not a step valve in the technical sense as understood by a skilled person. The patent suggests in paragraph [0044] that the gas flow rate can be varied over a broad range, essentially ranging from the fully opened state to the fully closed state, including essentially all intermediate positions. However, the disclosure concerning the possible gas flow rates does not change the understanding of the person skilled in this field that the expression "step valve" denotes a valve which allows the gas flow to be adjusted to a number of pre-set gas flow levels. These pre-set gas flow levels can theoretically be selected at a larger number of intermediate positions between the fully opened state and the fully closed state as described in paragraph [0044] of the patent. However, this does not imply that a step valve is a continuous valve.

Furthermore, E3' does not disclose that the valve is closed "gradually" by the user.

Hence the subject-matter of claim 1 differs from the method according to E3' in that the gas burner comprises a step valve and in that the step valve is gradually transferred to the closed state, with an idle time (20) of predetermined duration of the step valve (8) being provided between complete closure of the safety valve (7) and the start of transfer to the closed state.

10. Auxiliary request 3 - Article 56 EPC

10.1 E2 as starting point

10.1.1 As indicated above, the subject-matter of claim 1 differs from the operating method disclosed in E2 in that the step valve is closed after an idle time after closure of the safety valve.

10.1.2 The idle time in connection with the step valve has the effect of obtaining a compromise between wear and safety since it avoids excessive movement of the step valve while providing a safe state in which the gas supply is shut off by both valves, see paragraph [0011] of the patent. At the same time, the final closure of the step valve contributes to the safety of the gas burner, see paragraph [0058] of the patent.

It can be accepted that the effect of reducing wear is obtained for example when the user restarts the burner immediately after an unintended shut-off of the gas burner, even when a relatively short idle time period is considered.

10.1.3 The opponent argues that the effect would not be obtainable over the whole scope of protection claimed

if the idle time was shorter than the time period between the closure of the safety valve and the restart of the gas burner by the user. In addition, the effect would only potentially occur if the user did not use the gas burner properly, for example in the case of an unintentional shut-off.

This argument is not convincing.

Claims and the expressions used in the claims have to be interpreted in a technically meaningful sense. With this in mind, an idle time according to claim 1 does not refer to an extremely short period of time which would for example be shorter than the time needed for the gas burner to be accidentally shut off and immediately switched back on by the user. Moreover, reducing wear in cases where a gas burner is used in a specific manner, for example when closing the valve unintentionally, contributes to reducing wear and is thus a technical effect, which is obtained due to the use of an idle time as defined in claim 1. Whether this technical effect is achieved during each use or only in certain cases is not crucial in this regard since the effect can be obtained, and therefore has to be considered in assessing inventive step. While it is true that claim 1 is a method claim, this does not mean that the particular user interaction which might lead to the technical effect has to be included as an explicit method step. The defined method is a method of operating the gas burner that is fully defined without the actions of a potential user.

10.1.4 The objective technical problem can thus be formulated as providing a method of operating a gas burner that results in less wear while maintaining a high level of safety.

10.1.5 Starting from E2, it is not obvious to initiate complete closure of the regulating step valve since E2 aims at an operating mode which saves energy and therefore avoids further movement of the regulating valve, see paragraph [0011]. Further, neither E2 nor any other document cited by the opponent discloses that the closure of a heat regulating valve should be delayed by a predetermined idle time after shut-off of the safety valve in order to reduce wear of the step valve.

Therefore the subject-matter of claim 1 is not obvious starting from E2.

10.2 E7 as starting point

Starting from E7, in principle the same arguments apply as with regard to E2.

Neither E7 nor any other document cited by the opponent discloses that the closure of a regulating valve should be delayed by an idle time after shut-off of the safety valve in order to reduce wear of the step valve.

The subject-matter of claim 1 is not obvious starting from E7 either.

10.3 E3' as starting point

Starting from E3', the subject-matter of claim 1 differs in that the heat regulating valve is a step valve and in that the closure of the step valve starts after a predetermined idle time after the shut-off of the safety valve.

The operating method of E3' provides that the continuous heat regulating valve is shut off by the user following visual indication that the respective valve in question is still open, see paragraphs [0014] and [0015] of E3'. For the sake of argument, it may be accepted that it is obvious to replace a continuous valve by a step valve in the gas burner of E3'. However, in the context of E3', there is no reason for, or indication of, a predetermined idle time being provided after which the valve is starting to close. Such a further step does not fit with the operating mode of E3', which relies on the user's input.

11. According to the mutual understanding of the parties and the board, the conclusion and reasoning regarding claim 1 of auxiliary request 3 also applies to claim 7 of auxiliary request 3.

12. In view of the above, none of the arguments presented by either appellant provide a reason to set the contested decision aside.

Order

For these reasons it is decided that:

The appeals are dismissed.

The Registrar: The Chairman:

C. Spira C. Herberhold

Decision electronically authenticated