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D E C I S I O N
of 5 December 2002

Case Number: T 0690/01 - 3.2.3

Application Number: 94116206.7

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Language of the proceedings: EN

Title of invention:

Improvement in the automatic self-cleaning arrangement of a cooking oven

Patentee:

ELECTROLUX ZANUSSI GRANDI IMPIANTI S.p.A.

Opponent:

Rational Aktiengesellschaft

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56, 84, 123(2)

Keyword:

"Inventive step - no (main request)"

"Amendments - clarity (no) and added subject-matter (yes)
(auxiliary request)"

Decisions cited:

-

Catchword:

-



Case Number: T 0690/01 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 5 December 2002

Appellant: Rational Aktiengesellschaft
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Decision under appeal: Interlocutory decision of the Opposition Division
of the European Patent Office posted 17 April
2001 concerning maintenance of European patent
No. 0 652 405 in amended form.

Composition of the Board:

Chairman: C. T. Wilson
Members: U. Krause
J. P. B. Seitz

Summary of Facts of Submissions

I. The appeal contests the interlocutory decision of the opposition division dated 13 March 2001, issued in writing on 17 April 2001, to maintain the European patent 0 652 405 in amended form. The amended independent claim 1 found in the contested decision to meet the requirements of the EPC, in particular of Articles 52 to 57 (novelty and inventive step) and 123(2), reads as follows:

"1. Food cooking oven, comprising an access door (1), a cooking cavity (2), a motor-driven fan (3) situated on the back side of said cooking cavity (2), a partition wall (4) provided to diffuse the air flow generated by said fan (3), a chamber (5) accommodating said fan (3) and confined on its front side by said partition wall (4),

- a first branch (22) being provided with an end portion connected via a pump (9) to a first reservoir (8) adapted to supply detergent substances,

- a second branch (23) being additionally provided, an end portion of which terminates via a respective pump to a second reservoir, adapted to supply rinsing liquids,

- the opposite ends of said first and second portions terminating with respective nozzles (7,18),

characterized in that:

- said nozzles (7,18), that are provided for spraying the detergent substance and the rinsing liquid, respectively, are joined together into a single nozzle (20) coming out from a single conduit (21) which is divided into said first and second branches (22,23), said single nozzle (20) being positioned close to the inlet side of the wheel of the fan,

- said pump and said fan are connected with a control arrangement (10) adapted to control their operation."

II. In the decision under appeal the following prior art was taken into consideration:

D1: DE-A-28 42 771

D2: EP-A-0 131 775

D3: GB-A-2 065 867

D4: EP-A-0 277 888

D5: DE-A-33 04 059

D6: DE-A-31 14 951

III. The notice of appeal was filed by the Opponent (hereinafter denoted Appellant) on 13 June 2001. The appeal fee was likewise paid on 13 June 2001 and a statement of the grounds of appeal was submitted on 18 July 2001.

In response to a communication issued by the Board on 20 March 2002 as an annex to the summons to Oral proceedings scheduled for 5 December 2002 the Respondent stated that he would not participate in such proceedings and submitted an amended claim 1 as an auxiliary request. With letter of 4 November 2002 the Appellant further referred to the following prior art:

D7: DE-C-40 13 596

D8: DE-C-41 31 748

D9: DE-C-40 13 595

A request for postponement of the oral proceedings made by the Respondent was refused by the Board which informed the parties by fax on 25 November 2002 that the new documents D7, D8 and D9 were not considered, prima facie, to be so relevant as to be admitted into the proceedings, and that claim 1 according to the auxiliary request appeared to violate Article 123(2) EPC.

With fax of 27 November 2002 the Respondent submitted a further amendment of this claim which, in this final form, differed from claim 1 as maintained in the decision under appeal by defining that "it is sprayed (from the single nozzle) towards fan (3)" and that the control arrangement controls the pump (9) and the fan (3) "in order to make them work simultaneously during said spraying the detergent substance and the rinsing liquid".

Oral proceedings were held on 5 December 2002 in the absence of the Respondent. In these oral proceedings the Appellant queried whether the amended claim 1 submitted on 27 November 2002 belonged to the main or auxiliary request because this amendment was said to "definitely clear our position".

IV. The arguments of the Appellant can be summarized as follows:

Claim 1 as maintained by the first instance was lacking novelty in view of the cooking oven shown in Figure 1 of D1 wherein a pump for spraying the detergent and the rinsing water was mandatory and the central,

intermediate nozzle (28) located on the separating wall (18) close to the inlet side of the fan in Figure 1 of document D1 was a single nozzle in the sense that it was a common nozzle combining the functions of the individual nozzles for spraying the detergent and the rinsing liquid, respectively. If the replacement of the multiple common nozzles (28) in D1 by a single common nozzle was seen as a difference, the objective problem should relate to simplifying the oven design, because the problem concerning the lack of room in front of and behind the fan, as mentioned in column 4, lines 38 to 42 of the patent, was already solved in D1 by substituting a single common conduit (31) for the multiple conduits leading to the different nozzles. It was obvious to solve the new objective problem of simplifying the oven design by reducing the number of nozzles to one only, in particular as D1 clearly stated in the first paragraph of page 6 that the detergent sprayed from the nozzle should be entrained in the circulating air stream for distribution to all surfaces in the cooking cavity and fan chamber in the same manner as in the patent, and the person skilled in the art was aware that one nozzle positioned within the cooking cavity, as in Figure 2 of D1, was sufficient for such an entrainment. Further, Figure 1 of the patent, which was stated to describe the prior art according to D1, showed an arrangement with a sole nozzle for spraying detergent. A similar suggestion was found in D6 disclosing, according to claim 1, at least one nozzle (53) spraying detergent and/or rinsing water for cleaning purposes.

The additional features included in claim 1 submitted on 27 November 2002 were taken from the description of the prior art in the application, leading to a problem

under Article 123(2) EPC, and related to an originally undisclosed operation whereby the detergent substance and the rinsing liquid were sprayed simultaneously. If the simultaneous operation was meant to refer to the pump and the fan, a clarity problem arose since either both pumps, rather than pump (9) only, had to be operated for spraying detergent substance and rinsing liquid simultaneously with the operation of the fan, or detergent only was sprayed, while operating the fan, by the pump (9) provided for this purpose. With regard to novelty and inventive step no new situation was encountered because, in the oven of D1, the fan and the pump for spraying detergent were also controlled so as to operate simultaneously (see claim 5 of D1) and the oven included, in the embodiment of Figure 2, nozzles (29) spraying detergent towards the inlet of the fan for distribution thereof. Nozzles directed towards a fan were known for obtaining a uniform distribution of liquid droplets in a stream of air from D7, D8 and D9.

V. The Respondent counterargued essentially as follows:

The term "single nozzle" clearly defined a sole common nozzle for the detergent and the rinsing liquid. In order to cooperate properly with the fan, this single nozzle had to be directed towards the fan intake. This feature was implicit in claim 1 of the main request and explicitly included in claim 1 of the auxiliary request. In contrast, the embodiment of Figure 1 of D1 comprised six nozzles directed towards the center of the cooking cavity, ie in the opposite direction. Further, it lacked any indication of a pump and of a single control means controlling the operation of a pump and of the fan. These differences were not rendered obvious by the arrangement of Figure 2 of D1

which had several nozzles 33,34 situated on the bottom of the cooking cavity and oriented towards the center thereof, whereas the invention required a single nozzle only, in combination with the fan, for distributing the liquid throughout the cooking cavity. Thus, D1 gave the impression that a sufficient cleaning performance could be achieved only by means of a multiple nozzle arrangement and could not provide a hint that a single nozzle might be adequate for sufficiently cleaning the oven.

- VI. The Appellant requests that the decision under appeal be set aside and the patent be revoked.

The Respondent requests that the appeal be dismissed and that the patent be maintained as amended before the first instance (main request). He further requests that the impugned decision be set aside and that the patent be maintained on the basis of his auxiliary request filed on 27 November 2002.

Reasons for the Decision

1. The appeal meets the requirements of Articles 106 to 108 EPC and of Rules 1(1) and 64 EPC and is, therefore, admissible.
2. In its fax of 27 November 2002 the Respondent referred to the amended claim 1 "conditionally proposed" in the previous submission dated 5 October 2002 which was to be "definitely" clarified with respect to the simultaneous operation of the pumps and of the fan by the amended version attached to that fax letter. Thus, this clarification obviously concerns the wording of

the conditionally filed claim and does not affect the status of this claim as being "conditionally proposed", i.e. relating to an auxiliary request for maintenance of the patent if claim 1 as maintained in the impugned decision, according to the main request, was found unallowable. A withdrawal of the main request, as supposed by the Appellant, requires a clear and unambiguous declaration to this effect, and no such declaration was ever made by the Respondent. Hence, the amended claim 1 submitted with the fax letter of 27 November relates to an auxiliary request of the Respondent, rather than substituting the main request.

3. As set forth in the decision under appeal, claim 1 of the main request is a combination of granted claim 1 with further features found in the original claim 1. A further definition concerning the position of the nozzle close to the "inlet side" of the fan wheel, rather than just near the fan wheel as in original claim 1, is supported for example by Figure 2 which clearly shows this position. Thus, the requirements of Articles 123(2) and (3) are met.

4. Concerning patentability it is undisputed that document D1 constitutes the most pertinent prior art. This document discloses, in Figures 1 to 3, three embodiments of a food cooking oven differing with respect to the arrangement of the nozzles for injecting detergent and rinsing water for cleaning the oven. In the embodiment of Figure 1 a number of nozzles (28) are located on opposite walls of the cooking cavity (4) and orientated away from the walls towards the interior of the cavity. The nozzles (28) are connected to a common conduit (31) supplying either detergent liquid or rinsing water from reservoirs (12,11) through

respective branches (12a,11a). The oven shown in Figures 2 and 3 comprises two types of nozzles, a first type (29) positioned at the inlet side of the fan wheel (16) for spraying detergent towards that inlet side, and a second type (33,34,36) positioned in the fan chamber (3) and in the cooking cavity (4) for spraying rinsing water into the respective chamber or cavity and onto the walls thereof.

5. The Appellant considers the first embodiment shown in Figure 1 of D1 as novelty destroying because the central, intermediate nozzle located on the partition wall (18) on the left side of the cooking cavity (4) was close to the inlet side of the fan wheel and a "single" nozzle in the sense that it combined the functions of the nozzles for spraying the detergent and the rinsing liquid. This interpretation does not, however, correspond to the usual meaning of the term "single" as defining, in combination with a nozzle, one sole nozzle, and there is no basis in the patent for a broader definition of this term. In fact, joining the two nozzles specified in the precharacterising portion of claim 1 into a "single" nozzle will give one sole common nozzle, and the problem encountered in the prior art, as stated in column 4, lines 38 to 50 of the patent, is based on an arrangement of conduits each terminating in a single nozzle, as shown in Figure 1, and solved by a single common conduit terminating, therefore, in a single common nozzle, as shown in Figure 2.

6. As a consequence, the subject-matter of claim 1 of the main request differs from the oven disclosed in D1 in that the common conduit has a single nozzle positioned close to the inlet side of the fan wheel. Since the

orientation of this nozzle is not specified, this single nozzle may also be directed towards the interior of the cooking cavity, in the same manner as the plurality of nozzles (28) in D1. The Respondent argues that, in claim 1, an orientation of the nozzle towards the fan inlet side was implicit because otherwise it could not work properly, especially when operating the fan. This argument is not convincing. In fact, claim 1 specifies, in its final feature, a control arrangement for operating the pump and the fan in general terms without defining any time relationship therebetween, in particular any simultaneous operation. Thus, the pump and fan may be operated alternatively or simultaneously. An alternative operation could not, in principle, have any adverse effect on the spray from the nozzle. The effect of a simultaneous operation may be intended, as in D1, wherein the air flow caused by the fan entrains the detergent sprayed from the nozzles, including the left center nozzle close to the fan inlet side, towards the interior of the cooking cavity for distribution throughout the cavity and fan chamber. Similarly, a single nozzle located close to the fan inlet and directed towards the cooking cavity could spray the detergent into the cooking cavity for entrainment in the air flow aspired by the fan.

7. The replacement of the multiple nozzles (28) in the cooking cavity according to Figure 1 of D1 by a single nozzle, resulting in a simplified nozzle arrangement and reduced expense thereof, is considered to be an obvious choice of the skilled person. The multiple nozzles in the embodiment of Figure 1 of D1 have the double task of first spraying the detergent onto the walls of the cooking cavity and into the air stream generated by the fan (see page 9, lines 16 to 21, and

page 11, lines 29 to 31), and thereafter spraying the rinsing water onto the walls of the cooking cavity whilst the fan is switched off (page 12, lines 9 to 13). In Figure 2 of D1 a single nozzle (34) is provided at a bottom center position in the cooking cavity for spraying the rinsing water into the cavity and onto its walls. The skilled person will, therefore, be aware that a single nozzle, as in Figure 2, is able to spray liquid into the cooking cavity, where it may be entrained by an air stream produced by the fan, as is the case with the detergent substance in Figure 1, or not, as is the case with the rinsing liquid in Figure 2, and onto the walls of the cooking cavity, and select such a single nozzle to perform both tasks. In order to do this, the nozzle need not be located at the bottom center of the cooking cavity but could be, if suitably designed, at a central position of any of the walls, including the rear center position close to the fan inlet, to uniformly distribute the sprayed liquid within the cooking cavity and on the walls thereof.

In the decision under appeal it was concluded that "the skilled person gets the impression from D1 that a sufficient cleaning performance can be achieved only by means of a multiple nozzle arrangement". The Board does not agree with this conclusion because it does not take due account of the embodiment of Figure 2 of D1 having a single nozzle (34) within the cooking cavity for spraying liquid into the cooking cavity and onto the walls thereof. A comparison with the Figure 1 embodiment reveals that this single nozzle can be used for spraying detergent and rinsing liquid if alternatively connected to a corresponding supply reservoir, whereby the fan chamber was likewise cleaned by the liquid droplets entrained in the air stream

aspired from the cooking cavity by the fan, and the additional nozzles (33) and (29) shown in Figure 2 were of no further assistance and could be removed.

8. Pumps provided between the reservoirs and the first and second branches, as specified in claim 1, are not disclosed in D1. Suitable means are, however, necessary to generate the required pressure for spraying the detergent and the rinsing water, as mentioned on page 5, lines 14 to 17, of D1, and the most common means for generating this pressure, unless provided by the water mains, are pumps. An example for a pump employed for generating the pressure required to spray detergent and rinsing liquid from nozzles into an oven is disclosed in document D6 (page 8, ultimate paragraph). This feature cannot, therefore, contribute to establishing the non-obviousness of the subject-matter of claim 1.

The Respondent argues that claim 1 was further distinguished from the disclosure of D1 by the single control means for the pump and the fan. This argument is not convincing. The "control arrangement" adapted to control the operation of the pump and the fan, as specified in claim 1, corresponds to the control means implied by the description in D1, in the paragraph bridging pages 6 and 7 as well as pages 11 and 12, of an automatic cleaning process with a programmed control operating the fan and the injection of detergent and rinsing water.

9. The subject-matter of claim 1 of the main request is, therefore, considered as not involving an inventive step. Hence, the main request cannot be allowed.

10. The amended claim 1 of the auxiliary request includes, as compared with claim 1 of the main request, the further features that (a) it is sprayed, from the single nozzle, towards fan (3), and (b) that the operation of the pump (9) and fan (3) is such as "to make them work simultaneously during said spraying the detergent substance and the rinsing liquid". The Appellant did not challenge the disclosure of the features in the original application but argued that the corresponding original disclosure (on page 6, lines 2 to 5 and 9 to 11, and page 7, line 30, to page 8, line 2) related to a description of the two-nozzle embodiment of Figure 1 which was prior art and could not, therefore, form a basis for further defining the invention. The Board cannot follow the Appellant in this respect because the embodiment of Figure 1, erroneously designated as prior art in the patent, was originally described as part of the invention, and the embodiment of Figure 2 concerned an improvement thereof as regards the number and connection of the nozzles only, the other characteristics not being affected and remaining as before. Hence, it is evident from the original disclosure that the Figure 2 embodiment corresponds to that of Figure 1 as far as the orientation of the nozzle towards the fan wheel, also shown in Figure 2, and its control to operate simultaneously with the fan is concerned. The further objection raised by the Appellant under Article 123(2), concerning the originally undisclosed operation of spraying the detergent substance and the rinsing liquid simultaneously, is likewise without merits because the word "them" in the added feature "in order to make them work simultaneously" clearly refers to the pump and the fan, rather than to the two pumps supplying the detergent substance and the rinsing liquid.

11. It must be taken into consideration, however, that the original disclosure of the above mentioned added feature (b) on page 6, lines 2 to 5 and 9 to 11 for the simultaneous operation of the fan and the detergent injecting nozzle, and on page 7, line 30, to page 8, line 2 for the simultaneous operation of the fan and the rinsing liquid injecting nozzle, relates to the operation of two pumps, one (pump 8 or 9, respectively) for spraying the detergent and the other (pump 15) for spraying the rinsing liquid. Whilst according to page 9, lines 19 to 28 of the original application the other pump may be replaced by the water supply mains, there is no disclosure of a simultaneous operation of the fan and of the pump (9) for spraying detergent during the spraying of the rinsing liquid, as defined in the added feature (b).

Further, this new feature introduces an inconsistency with the precharacterising portion of claim 1 where it is specified, in accordance with the original disclosure, that pump (9) is operated for spraying detergent substance only, whereas a further pump is provided for spraying rinsing liquid. This inconsistency cannot be resolved because it is not possible to determine, on the basis of the wording of the claim, whether the simultaneous operation shall relate to the fan and both pumps, thereby operating the fan while spraying the detergent substance **and** the rinsing liquid, or to the fan and the single pump (9) only, whereby the fan would operate only when spraying the detergent substance, its operation when spraying the rinsing liquid being left undefined.

Thus, the amended claim 1 of the auxiliary request cannot be allowed because it contains subject-matter

which extends beyond the contents of the application as filed (Article 123(2) EPC) and it does not meet the requirement of clarity (Article 84 EPC).

12. With the communications dated 20 March 2002 and 25 November 2002 the attention of the Respondent was drawn to a clarity problem with regard to the pump(s) involved and to a problem of insufficient disclosure concerning the simultaneous operation of the pump(s) and fan, respectively. Moreover, it follows from the provisions of Article 102(3) that any amendments to the claims will have to be checked for compliance with the requirements of Articles 123(2) and 84 EPC before the examination as to the patentability of the amended claim. Thus, a discussion of these questions at the oral proceedings had to be expected.

13. It should be noted that the Board also has severe doubts regarding the patentability of the subject-matter of the amended claim 1, regardless of how it is construed, in view of the fact that D1 discloses, in Figure 1, not only the concept of utilising common nozzles for alternatively spraying the detergent substance and the rinsing liquid, but also (in Figure 2 and the text bridging pages 5 and 6) the concept of distributing a liquid by spraying it directly towards the inlet of the running fan, rather than by entraining it in the air aspirated from the oven cavity as in Figure 1, and its advantages concerning the uniform distribution to all parts of the oven interior, and that a single nozzle would obviously be sufficient in the latter case since the distribution is effected by the fan, rather than by the nozzles.

14. Since neither the main request nor the auxiliary

request can be allowed, the patent must be revoked.

15. The documents D7, D8 and D9 were cited by the Appellant as disclosing nozzles directed towards a fan inlet for obtaining a uniform distribution of liquid droplets in a stream of air. However, this feature is already known from Figure 2 of D1. Moreover, all three documents refer to the injection of steam through the nozzles for cooking food in the oven, rather than to the injection of detergent or rinsing liquid for cleaning the oven as in the patent and in D1. The documents D7, D8 and D9 were, therefore, not admitted into the proceeding as being irrelevant and submitted at a late stage.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

A. Counillon

C. T. Wilson