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D E C I S I O N
of 26 April 2005

Case Number: T 1235/03 - 3.2.6

Application Number: 96201658.0

Publication Number: 0748892

IPC: D06F 39/00

Language of the proceedings: EN

Title of invention:
Washing machine with device and method to control the rinsing

Patentee:
Indesit Company s.p.a.

Opponent:
Miele & Cie. KG

Headword:
-

Relevant legal provisions:
EPC Art. 123(2), 84, 54(2), 56

Keyword:
"Amendments (allowable)"
"Clarity (yes)"
"Novelty, inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1235/03 - 3.2.6

D E C I S I O N
of the Technical Board of Appeal 3.2.6
of 26 April 2005

Appellant: (Opponent)
Miele & Cie. KG
Carl-Miele-Str. 29
D-33332 Gütersloh (DE)

Representative:
-

Respondent: (Proprietor of the patent)
Indesit Company s.p.a.
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Representative:
-

Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 31 October 2003 concerning maintenance of European patent No. 0748892 in amended form.

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. Pricolo
R. T. Menapace

Summary of Facts and Submissions

I. The appeal is from the interlocutory decision of the Opposition Division posted on 31 October 2003 concerning the maintenance in amended form of European patent No. 0 748 892, granted in respect of European patent application No. 96201658.0.

In the decision under appeal the Opposition Division considered that claim 1 of the patent in suit as amended in accordance with the main request filed during the oral proceedings met the requirements of Article 123(2) and (3) EPC and that its subject-matter was novel and also involved an inventive step over the available prior art comprising in particular documents

D2: EP-B1-0 030 602;

D3: EP-A-0 017 516;

D4: extract from the magazine Test 1/93, pages 38, 39.

II. The appellant (opponent) lodged an appeal, received at the EPO on 31 December 2003, against this decision and simultaneously paid the appeal fee. With the statement setting out the grounds of appeal, received at the EPO on 25 February 2004, the appellant filed the following additional documents:

D7: DE-A-29 01 974;

D8: HEA-Bilderdienst 6.7, Oktober 1986, pages 33 to 35 and 52.

III. In an annex to the summons for oral proceedings pursuant to Article 11(1) Rules of Procedure of the boards of appeal the Board expressed its doubts concerning the admissibility (Rule 57a EPC) and the clarity (Article 84 EPC) of the amendments made to the patent in suit in the form allowed by the Opposition Division, as well as concerning the inventiveness (Article 56 EPC) of the claimed subject-matter.

IV. Oral proceedings took place on 26 April 2005.

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

The respondent (patentee) requested that the patent be maintained on the basis of claims 1 to 13 and the description as filed during the oral proceedings, with the figures of the patent as granted.

V. Independent claims 1 and 9 of the appellant's sole request read as follows:

"1. A household washing-machine, specifically a laundry washer, comprising a control unit (MP) and means (A,B) for detecting the detergent or ionic concentration degree of the water, wherein the control unit (MP) controls the execution of a rinsing process that goes on until a predetermined rinsing performance (MR,MC) has been reached, as detected in function of measures of detergent or ionic concentration of water realized through said detection means (A,B), characterised in that it comprises a selection device (M) of the quality of the rinsing performance, consisting e.g. of a rotary knob, actuated by the user to indicate the predetermined rinsing performance to the control unit,

said selection device (M) allowing the selection of the predetermined rinsing performance (MR,MC) to be obtained among a plurality of different predetermined rinsing such that the user is actually able to operate a qualitative choice through said selection device (M) for the type of rinsing to be carried out by the washing machine, the control unit (MP) being designed for controlling the rinsing process (MR, MC) in a closed loop process in function of the selection operated by the user through said selection device (M) and in function of the detergent or ionic concentration measurements of the water carried out by said detection [*"detection", as it should correctly read, having been inserted by the Board in place of the obviously erroneous term "selection" appearing in the text as filed*] means (A,B), said selection device (M) being provided with two limit positions (MC,MR), between which the predetermined rinsing performance to be obtained can be selected, said limit positions respectively representing:
- a minimum water consumption for the rinsing process to be obtained, and
- a minimum ionic or detergent concentration the water should have at the end of the rinsing process to be obtained."

"9. A method for controlling the rinsing process in a household washing-machine, in particular a laundry washer, of the type comprising means for realizing the washing and the rinsing, a control unit (MP) and means (A,B) for detecting the detergent or ionic concentration degree of the water, wherein the control unit (MP) controls the execution of a rinsing process that goes on until a predetermined rinsing performance

(MR,MC) has been reached, as detected in function of measures of detergent or ionic concentration of water realized through said detection means (A,B),
characterized by:
- providing a selection device (M) of the quality of the rinsing process to be carried out by the machine, said selection device consisting e.g. of a rotary knob, actuated by the user to indicate the predetermined rinsing performance to the control unit;
- supplying, through said selection device (M) actuated by the user, the control unit (MP) with information being representative of the quantity of detergent residues that may still be present in the water at the end of a rinsing process, to consider it terminated;
- making the control unit (MP) to control the rinsing process (MR, MC) in a closed loop process in function of the information provided through said selection device (M) and in function of the information resulting from the measurements carried out through said detecting means (A,B), such that the user is actually able to operate a qualitative choice through said selection device (M) for the type of rinsing to be carried out by the washing machine,
said predetermined rinsing performance being selectable within a range of possible different predetermined performances which are comprised between two limit performances, wherein:
- in the first limit performance the rinsing process is executed with a minimum water consumption,
- in the second limit performance the rinsing process terminates upon reaching a minimum ionic or detergent concentration in the water at the end of the rinsing process."

VI. The objections raised by the appellant in respect of the respondent's request filed during the oral proceedings before the Board of appeal can be summarized as follows:

According to the wording of claims 1 and 9, the selection device could consist of any selection device capable of being actuated by the user to indicate the predetermined rinsing performance to the control unit. For this purpose, however, the application as filed only disclosed a rotary knob. Therefore, the amendments made introduced subject-matter extending beyond the content of the application as filed. Furthermore, claim 10 and the passages of the description referring to the restriction of the water consumption and of the number of rinses to maximum values were inconsistent with the wording of claims 1 and 9 which required a closed loop control. As a matter of fact, the closed loop control required that the rinsing process was terminated when the predetermined rinsing performance was reached. If the control of the rinsing process could be terminated before reaching the predetermined rinsing performance, because either the maximum water consumption or the maximum number of rinses were reached, then there was no longer a closed loop control of the rinsing process.

VII. In support of its request the respondent relied essentially on the following submissions:

It was clear from the disclosure in the application as filed that a rotary knob was one possible embodiment of a selection device and therefore the general wording of claims 1 and 9 did not contravene Article 123(2) EPC.

The fact that in some embodiments the water consumption and the number of rinses could be restricted to certain respective maximum values was not inconsistent with the wording of claims 1 and 9 which required a closed loop control; simply, the closed loop control was carried out within these limits as it made no sense to work outside them.

Document D2, which represented the closest prior art, disclosed a washing machine in which the rinsing performance was preset during the manufacturing process by means of a variable resistor which was not to be operated by the user. The inventive concept underlying the patent in suit consisted in allowing the user to select, by means of a selection device, the predetermined rinsing performance to be achieved with the closed loop control of the rinsing process. The user was thereby allowed to make a qualitative choice for the rinsing process based on a balance between, on the one hand, the need of removing the detergent to a maximum extent from the clothes and, on the other hand, the water consumption. This concept was not rendered obvious by the prior art which only disclosed an open loop qualitative control of the rinsing process consisting in adding or removing a rinsing cycle. Such control, as disclosed e.g. in D3 and D4, did not allow to consistently obtain a predetermined rinsing performance because of its open loop nature, and led in fact to different results depending on circumstances such as the quantity of detergent introduced at the beginning of the washing process.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments*

2.1 Basis for the amendments of the independent claims 1 and 9 is found in the application as filed (see in particular claims 1, 2, 3 10, 11 and page 4, lines 14 to 20).

2.2 The appellant contested that there was a basis in the application as filed for the generic reference in claims 1 and 9 to a "selection device … actuated by the user" since only a rotary knob was disclosed as a selection device which could be actuated by the user.

The Board cannot follow this view. The original claims (see claims 2 to 4 and 10, 11) refer in a general manner to a selection device for selecting a determined rinsing performance. The statement of the technical problem to be solved (page 3, lines 20 to 25 of the application as filed) specifically refers to "allowing the user to manage a correct compromise … between the need of removing the detergent to a maximum extent from the clothes and keeping water consumption low". The skilled reader comparing the claims and the technical problem in the application as filed would therefore clearly and unambiguously infer that the selection device is one which can be actuated by the user. In fact, the selection device is the only technical element of the claimed washing-machine (particularly as defined in independent original claim 2) that allows such an intervention from the user. Furthermore, it is

a matter of general knowledge that selection devices for washing machines are not limited to rotary knobs but comprise other devices such as push buttons.

In the application as filed (page 16, lines 8,9) it is referred to "some setting means instead of the knob M but not actuatable by the user". This passage cannot however be read to imply that the only setting means actuatable by the user is the rotating knob, but merely as referring to an embodiment – which does not fall under the scope of the claims and accordingly has been deleted (see column 13 of the description of the patent in suit) - in which the user is not allowed to interfere with the rinsing process.

2.3 Dependent claim 2 includes features of original claim 2 and dependent claims 3 to 8 and 10 to 13 essentially correspond to claims 4 to 9 and 12 to 15, respectively, of the application as filed.

The description was amended to acknowledge the prior art known from D1 and to delete the above-mentioned embodiment which does not fall under the scope of the claims.

2.4 Hence, the amendments made to the patent in suit do not give rise to objections under Article 123(2) EPC.

2.5 Since independent claims 1 and 9 include all the features of independent claims 1 and 10 as granted and further additional features, in particular the additional features of granted claims 2 and 11 respectively, the amendments made result in a restriction of the protection conferred by the patent

in suit and therefore do not give rise to objections under Article 123(3) EPC.

2.6 The appellant objected under Article 84 EPC that claim 10 and the passages of the description referring to the restriction of the water consumption and of the number of rinses to certain respective maximum values were inconsistent with the wording of claims 1 and 9 which required a closed loop control.

The closed loop control in accordance with the patent in suit involves the control of the duration of the rinsing process on the basis of the feedback obtained by the detection means for the detergent or ionic concentration. The fact that the rinsing process might be terminated once a maximum value of water consumption (see paragraphs [0038] and [0055] and claim 10 of the patent in suit) or once a maximum number of rinses have been reached (see paragraph [0078]), before the signal from the detection means reaches a predetermined level corresponding to the predetermined rinsing performance, does not contradict the fact that during the rinsing process a closed loop control as outlined above is carried out, but implies that under certain circumstances the closed loop control might be overridden and the rinsing process terminated even if the predetermined rinsing performance used as a threshold for the closed loop control has not been reached. In fact, overriding a closed loop control is a common measure for avoiding process instabilities under certain circumstances. In the case of the patent in suit, one might think for example of a situation in which the water is of such bad quality that the predetermined rinsing performance (in terms of ionic

concentration) is impossible to achieve, so that necessarily the closed loop system has to be overridden to terminate the rinsing process.

Therefore, the amendments meet the requirements of Article 84 EPC.

3. *Novelty, inventive step*

3.1 Novelty of the subject-matter of claims 1 and 9 is acknowledged as none of the available documents discloses a washing machine comprising a control unit which controls, in a closed loop process, the execution of a rinsing process until a predetermined rinsing performance set by the user by means of a selection device is reached.

3.2 Document D2 represents the closest prior art because it is the only available document relating to a household washing machine having a closed loop control of the rinsing process.

D2 discloses a washing machine according to the preamble of claim 1, namely a household washing-machine comprising a control unit ("Programmsteuereinrichtung") and (see Fig. 2) means (M) for detecting the detergent or ionic concentration degree of the water, wherein the control unit controls the execution of a rinsing process that goes on until a predetermined rinsing performance has been reached, as detected in function of measures of detergent or ionic concentration of water realized through said detection means (see claim 1 of D2). In accordance with the disclosure of D2, the predetermined rinsing performance corresponds

to the setting of a variable resistor R1 of a Wheatstone bridge (RW, RL, R1; see col. 4, lines 5-24) provided in the control unit. This variable resistor R1 (see Fig. 2) is an adjusting potentiometer not intended to be operated by the user: it is set during the manufacturing of the washing machine and then left without further adjustment.

In the course of the oral proceedings the appellant contested the finding, as set out in the communication of the Board annexed to the summons to oral proceedings, that the variable resistor R1 was an adjusting potentiometer not intended to be operated by the user. However, considering that this finding reflects the opinion of the Opposition Division as set out in the decision under appeal (page 4), that variable resistors in electronic circuits of the kind such as represented by the symbol used for R1 in Fig. 2 of D2 are set once and then no longer adjusted, and that the appellant did not submit any evidence in support of its allegation, that finding must be upheld.

Therefore, the subject-matter of claim 1 is distinguished from the washing-machine of D2 by the features defined in the characterizing portion.

3.3 The distinguishing features allow the user to select the predetermined rinsing performance which is in principle to be achieved by the washing machine. The user can establish a desired predetermined rinsing performance based on a balance between the need of removing the detergent to a maximum extent from the clothes and the need to keep water consumption low (see par. [0016] of the patent in suit).

Therefore, the objective technical problem solved by the washing machine of claim 1 consists in allowing the user to optimize the rinsing process depending on his needs.

3.3.1 Washing machines in which the user is allowed to modify the rinsing process depending on his needs are already known from the prior art. The teaching of the prior art is however limited to the provision of a device such as e.g. a push-button for adding or removing at least a rinse step to the ones usually preset by the wash-cycle or for increasing water level for the rinsing steps (see par. [0008] of the patent in suit; see D3, page 4, lines 30 to 33 and page 5, lines 31 to 33; see D4, page 39, left column, paragraphs before and after the heading "Leise auf Touren"). These prior art washing machines do not guarantee the achievement of a selectable and predetermined rinsing performance because there is no closed loop control of the rinsing duration based on the feedback obtained by the detection means for the detergent or ionic concentration which is indicative of the actual rinsing performance (see par. [0008] of the patent in suit) . Thus, the prior art's teaching might lead the skilled person towards the provision, in the washing machine according to D2, of a device for adding at least a rinse step to the rinsing process which would otherwise be carried out by the machine of D2 until a predetermined rinsing performance corresponding to the setting of the variable resistor R1 is reached. However, the prior art fails to give any indications that would lead the skilled person to provide a selection device which is such to allow the user to modify, i.e. select,

the predetermined rinsing performance which is taken as a basis in the closed loop process for controlling the rinsing process, thereby allowing to optimize the rinsing process by guaranteeing the achievement of a selectable and predetermined rinsing performance.

The other available documents do not provide any indications useful for solving the above-mentioned problem. In particular, documents D7 and D8 which were filed during the appeal proceedings relate to dryers, i.e. to machines in which no rinsing process is performed.

Therefore, the washing machine of claim 1 is not obvious to a skilled person in the light of the available prior art.

3.4 Since the method for controlling the rinsing process in a washing machine in accordance with claim 9 exploits all the essential features of the washing machine defined in claim 1, the subject-matter of claim 9 is also not obvious to a skilled person.

3.5 Therefore, the subject-matter of independent claims 1 and 9 is novel and involves an inventive step (Articles 52(1), 54(2) and 56 EPC).

In fact, novelty and inventive step of the subject-matter of the claims as amended during the oral proceedings before the Board were no longer contested by the appellant.

3.6 Dependent claims 2 to 8 and 10 to 13 define further embodiments of the washing machine of claim 1 and of

the method of claim 9 and likewise involve an inventive step.

4. Therefore the patent specification amended in accordance with the respondent's request forms a suitable basis for maintenance of the patent in amended form.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to maintain the patent on the basis of the following documents:

claims: 1 to 13 filed during the oral proceedings of 26 April 2005;

description: columns 1 to 13 filed during the oral proceedings of 26 April 2005;

drawings: figures 1 to 5 as granted.

The Registrar: The Chairman:

M. Patin P. Alting Van Geusau