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D E C I S I O N
of 7 February 2006

Case Number: T 0501/04 - 3.2.04

Application Number: 96107251.9

Publication Number: 0741991

IPC: A47L 15/42

Language of the proceedings: EN

Title of invention:

Arrangement for regeneration of the water softening resins in
a washing machine

Patentee:

WRAP S.p.A.

Opponent:

BSH Bosch und Siemens Hausgeräte GmbH

Headword:

-

Relevant legal provisions:

EPC Art. 100(a), 114(2)

Keyword:

"Main request - inventive step (yes)"

"Admission of late filed document into the proceedings (no)"

Decisions cited:

T 0056/87

Catchword:

-



Case Number: T 0501/04 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 7 February 2006

Appellant: BSH Bosch und Siemens Hausgeräte GmbH
(Opponent) Carl-Wery-Str. 34
D-81739 München (DE)

Representative: Dosterschill, Peter
BSH Bosch und Siemens Hausgeräte GmbH
Zentralabteilung Gewerblicher Rechtsschutz
Carl-Wery-Str. 34
D-81739 München (DE)

Respondent: WRAP S.p.A.
(Proprietor of the patent) Viale Aristide Merloni 47
I-60044 Fabriano (AN) (IT)

Representative: Dini, Roberto
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I-10060 None (Torino) (IT)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 13 February 2004
rejecting the opposition filed against European
patent No. 0741991 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: M. Ceyte
Members: C. Scheibling
H. Preglau

Summary of Facts and Submissions

- I. By its decision dated 13 February 2004 the Opposition Division rejected the opposition. On 13 April 2004 the Appellant (opponent) filed an appeal and paid the appeal fee simultaneously. The statement setting out the grounds of appeal was received on 11 June 2004.
- II. The following documents played a role in the present proceedings:
- D1: GB-A-2 031 614
D2: DE-A-29 50 728
D3: DE-C-42 17 652
D4: DE-A-41 18 586
- III. Opposition was filed on the grounds based on Article 100(a) EPC (lack of inventive step).
- IV. Oral proceedings before the Board took place on 7 February 2006.

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

He mainly argued as follows: The machine disclosed in D4 seeks to optimise the volume of water to be delivered to the salt container for regeneration, in function of the water hardness measured by a sensor. The prior art portion of D4 refers to a machine comprising a tank for regeneration water divided in compartments of different sizes so that the volume of water delivered to the salt container can be adjusted stepwise in function of the water hardness. D2

discloses an arrangement for regeneration of water softening resins which delivers a variable volume of water to the salt tank. Moreover, in D2 this volume is also function of the water hardness. Therefore, it would be obvious for a skilled person to modify D4 as taught by D2 so as to deliver a variable volume of water to the salt tank in function of the water hardness as sensed by the sensor. Therefore, the subject-matter of claims 1 and 9 does not involve an inventive step.

The Respondent (patentee) countered the Appellant's arguments and mainly argued as follows:

The aim of D4 is to simplify the machines known from the prior art and especially those comprising a regeneration tank with multiple compartments. This is achieved by using a fixed amount of water, which is delivered to the salt tank after a period of time calculated in function of the sensed water hardness. Thus D4 points in a direction which is totally different from the present invention. Furthermore, in D2 the relation between the amount of consumed water and water stored for regeneration is manually preset in function of the water hardness but continuously adjustable. D2 does not comprise an electronic control means able to adjust the volume of water for the regeneration step in function of the water hardness.

Accordingly, a skilled person would not contemplate combining D4 and D2 and would thus not arrive at the subject-matter of claims 1 and 9 as granted which therefore involves an inventive step.

The Respondent requested that the appeal be dismissed (main request) or alternatively that the decision under appeal be set aside and the patent be maintained on the basis of one of the sets of claims according to the first, second or third auxiliary request, all filed with letter dated 5 January 2006.

V. Independent claims 1 and 9 as granted read as follows:

"1. Washing machine, comprising an arrangement for the regeneration of the water softening resins, said arrangement comprising

- a container (R) for the resins used to reduce the degree of water hardness,
- a container (S) for the salt required for the resins regeneration,
- metering means (E.V., 7) for delivering a metered volume of water to the salt container (S) to execute said regeneration, where the resins regeneration processes are carried out periodically in time, in particular at each wash cycle executed by the machine, characterized in that the arrangement further comprises sensor means (A,B,C,Q,MP) of the hardness of the water from the mains and electronic control means (MP) for evaluating the optimal metered volume of water to be used in correspondence during the regeneration step as a function of the degree of water hardness detected by said sensor means (A,B,C,Q,MP) and consequently controlling said metering means (E.V.) in order to deliver to the salt container (S) a variable metered volume of water corresponding to said optimal volume."

"9. Control method for resins regeneration in a water softening system of a washing machine, said system comprising a resin container (R) and a salt tank (S), where said resins have to be periodically submitted to a regeneration process through a water and salt solution produced in said tank (S), characterized in that the volume of water to be delivered to the salt tank (S) to produce the volume of water and salt solution to be transferred to the resin compartment (R) for the resins regeneration is variable in time and is calculated by a control unit (MP) during the wash cycles as a function of the degree of water hardness used for washing."

Reasons for the Decision

1. The appeal is admissible.
2. *Inventive step:*
 - 2.1 D4 is the closest prior art document.

The washing machine according claim 1 as granted differs from that disclosed in D4 in that:

- electronic control means are provided for evaluating the optimal metered volume of water to be used in correspondence during the regeneration step as a function of the degree of water hardness detected by the sensor means and consequently controlling said metering means in order to deliver to the salt container a variable metered

volume of water corresponding to the optimal volume.

2.2 The washing machine according claim 9 as granted differs from that disclosed in D4 in that:

- the volume of water to be delivered to the salt tank to produce the volume of water and salt solution to be transferred to the resin compartment for the resins regeneration is variable in time and is calculated by a control unit during the wash cycles as a function of the degree of water hardness used for washing.

2.3 Accordingly, starting from the closest prior art document, the problem underlying the patent in suit may be seen in providing a softening system and method for automatic optimisation of the resins regenerating step so as to achieve a better use of the resins and salt as well as a more efficient use of the softening system (see patent specification, column 2, lines 13 to 20).

The Board is satisfied that said problem is solved by the above distinguishing features of claims 1 and 9.

2.4 D4 too seeks to optimise the resins regeneration process in order to reduce the amount of salt and water to be used. However, the solutions proposed in D4 and in the patent in suit are not comparable.

As a matter of fact, the patent in suit teaches to calculate and to meter the optimum volume of water to be used for the regeneration step, which is performed periodically, in the present case at each wash cycle.

In contrast, D4 proposes to calculate the optimum time interval at which the next regeneration process will take place, but uses always the same predetermined amount of water and salt (see D4, column 2, lines 12 to 17).

In other words in the patent in suit the time interval between two successive regenerating processes is fixed and the necessary amount of water and salt is adapted to need; whereas in D4 the amount of water and salt is fixed and the time interval between two successive regenerating processes is adapted to need.

- 2.5 The Appellant argued that D4 aims to optimise the concentration and amount of brine needed for a regeneration process and that the prior art cited in D4 already suggests to divide the regeneration water tank in compartments of different sizes so that the volume of water delivered to the salt container can be adjusted stepwise in function of the water hardness, or in other words to deliver a variable volume of water to the salt tank in function of the water hardness.

The Appellant therefore concluded that it would be obvious for a skilled person to adapt the regeneration system of D4 so as to deliver a variable volume of water.

This point of view cannot be shared by the Board.

According to the Case Law of the Boards of Appeal the technical disclosure in a prior art document has to be considered in its entirety, as it would be done by a

skilled person and it is not justified arbitrarily to isolate parts of such document from their context in order to derive therefrom a technical information which would be distinct from or even in contradiction with the integral teaching of the document (see T 56/87, OJ EPO 1990, 188).

D4 seeks to obtain a simplification with respect to common washing machines. This is achieved by providing a constant volume of regeneration water and an always filled container, which therefore does not need a supplementary valve, see column 2, lines 12 to 17. Thus, D4 seen alone does not teach a skilled person to vary the volume of water delivered to the salt container; D4 would rather lead away from the claimed solution, since the invention disclosed in D4 expressly seeks to overcome the drawbacks of a prior art system in which the volume of water delivered to the salt container is adjusted stepwise in dependence of the water hardness.

- 2.6 The Appellant also stated that the claimed "measured volume of water" possibly comprises the volume of water necessary to rinse out the resin compartment, since rinsing is part of the regeneration process; that D4 comprises means for measuring the volume of rinsing water and that therefore, in D4 the volume of water used for regeneration is measured too.

However, the fact that a volume is measured does not imply that it is variable, in fact in D4 the measured volume of rinsing water used to rinse out the resin compartment after regeneration is a fixed volume set to 2 litres (column 3, lines 44 to 50). Furthermore, it is

clear from the whole of the description of the patent in suit and from the independent claims themselves that the "measured volume of water" refers to the volume of water delivered to the salt container and thus, does not comprise the volume of rinsing water, since the rinsing water does not flow through the salt container.

2.7 D4 in combination with D2:

2.7.1 D2 (page 9, ultimate paragraph to page 10, paragraph 1; page 17, paragraphs 1 and 2; page 18, last paragraph to page 19, paragraph 1) discloses a regeneration process, wherein a volume of brine is prepared in a container proportionally to the volume of consumed softened water. Each time softened water is prepared, the water measuring means gives an impulse to a counter. The individual impulses can be summed up in a memory or directly used to produce a given amount of brine. A regeneration cycle is triggered when a predetermined period of time has elapsed or when the level of brine in the container, respectively the number of impulses stored has reached a preset threshold, which corresponds to the resin becoming exhausted.

The regeneration system disclosed in D2 has no sensor means to control the hardness of the water and does not deliver a measured volume of water to the salt container in function of the degree of water hardness detected by the sensor. Although the water hardness is taken into account when presetting the volume of delivered water which corresponds to one impulse, the volume of brine to be used is determined by the volume of softened water (number of impulses) and does not change when the water hardness varies.

2.7.2 The Appellant argued that it would be obvious for a skilled person to modify the arrangement of D4 as taught in D2 so as to arrive at a machine or a method as claimed in the patent in suit.

However, a skilled person would not contemplate using parts of the system according to D2 in an apparatus according to D4, because the disclosure of D2 is inherently incompatible with the disclosure of D4 in which the volume of brine to be used should be kept constant. Furthermore, neither D2 nor D4 disclose to calculate and to meter the volume of water to be delivered to the salt tank by a control unit as a function of the degree of water hardness. Consequently, a combination of D4 with D2 would not disclose these features either.

2.8 In its written submissions the Appellant also contemplated to combine D4 with D3 or with D1:

2.8.1 D3 (column 6, line 64 to column 7, line 41; Figures) discloses an apparatus able to deliver a measured volume of water to a salt container and to extract a measured volume of brine from it.

D3 refers neither to the water hardness nor to the relation between the measured volume of water and the water hardness.

Therefore, a combination of the machine or the method according to D4 with the teaching of D3 cannot lead to the claimed subject-matter.

2.8.2 D1 (column 2, lines 54 to 58; column 4, lines 8 to 12 and 25 to 34) discloses an apparatus for conditioning water, which can be programmed for regeneration on a day calendar basis, i.e. as a function of time. In addition thereto a sensor can be provided which is able to detect unsoftened water and to provide a signal so that the apparatus enters the regeneration mode.

D1 does not disclose control means for evaluating the optimal metered volume of water to be used during the regeneration step, in order to deliver to the salt container a variable metered volume of water corresponding to an optimal volume. Thus, a combination of D4 with D1 does not lead to the claimed invention.

2.9 Thus, the subject-matter of claims 1 and 9 as granted involves an inventive step with respect to the documents D1 to D4 seen alone or in combination with each other.

3. *Newly filed document D8:*

3.1 With letter dated 10 January 2006, thus less than one month before the date of the oral proceedings, the Appellant filed a new document D8: DE-A-35 08 276, which he considered to be the closest prior art document.

No specific reasons have been put forward by the Appellant to justify this late filing. Moreover, the introduction of this new prior art document can be considered neither as a response to an amendment of the claims nor as a reaction to the Board's communication sent together with the summons to the oral proceedings.

It is well established that a late-filed prior art document may be admitted and considered at the Board's discretion, see Article 10b of the Rules of Procedure of the Boards of Appeal. In exercising its discretion the Board will in first place have to consider the relevance of the late-filed prior art document on a prima facie basis. If it is no more relevant than those documents filed in time and does not disclose matter which could change the outcome of the proceedings, then it may be disregarded as being irrelevant.

- 3.2 As conceded by the Appellant himself during the oral proceedings, D8 mainly differs from D2 in that it explicitly refers to washing machines. However, D8 does not disclose to calculate and meter the volume of water to be used during the regeneration step in function of the actual degree of water hardness. Since none of the other cited documents discloses this feature, any possible combination of D8 with one of said other cited documents would likewise miss this feature.
- 3.3 Consequently, D8 is not relevant for the outcome of the present proceedings and therefore, the Board exercising its discretion under Article 114(2) EPC has decided not to admit D8 into the proceedings.
4. Since the main request of the Respondent can be allowed it is needless to proceed with the auxiliary requests.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Magouliotis

M. Ceyte