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Datasheet for the decision of 30 July 2009

Case Number: T 1567/07 - 3.2.06

Application Number: 99308608.1

Publication Number: 1045062

IPC: D06F 37/20

Language of the proceedings: EN

Title of invention:
Washing machine

Patentee:
SAMSUNG ELECTRONICS CO., LTD.

Opponent:
BSH Bosch und Siemens Hausgeräte GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 52(1), 54(1), 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Novelty and inventive step - yes"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1567/07 **-** 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 30 July 2009

Appellant: (Opponent)	BSH Bosch und Siemens Hausgeräte GmbH Carl-Wery-Str. 34 D-81739 München (DE)
Representative:	-
Respondent: (Patent Proprietor)	SAMSUNG ELECTRONICS CO., LTD. 416, Maetan-dong Paldal-gu Suwon-City Kyungki-do (KR)
Representative:	Walaski, Jan Filip Venner Shipley LLP 20 Little Britain London EC1A 7DH (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 13 July 2007 rejecting the opposition filed against European patent No. 1045062 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: P. Alting Van Geusau
Members: G. Kadner
K. Garnett

Summary of Facts and Submissions

I. The mention of grant of European patent No. 1 045 0621 in respect of European patent application No. 99308608,1, filed on 29 October 1999 and claiming a Korean priority from 26 March 1999, was published on 17 December 2003 with 6 claims. Independent claims 1 and 4 read as follows:

"1. A method of performing spin drying using a washing machine (1) having a drum driving motor (27), the method comprising the steps of:

determining the magnitude of a current ripple in AC power input to the washing machine (1) for driving the motor (27);

determining that said magnitude is below a threshold value; and

determining the voltage of said AC power; and

controlling the speed of the motor (27) in dependence on said ripple magnitude and on said voltage,

characterised by operating the motor (27) at a predetermined speed when determining the magnitude of said ripple, and the magnitude of said ripple is determined a predetermined time period after the motor (27) has reached said predetermined speed.

4. A washing machine comprising a rotatable drum (11) for receiving laundry, a motor (27) for driving the drum (11), AC power input means (90) for powering the motor (27), ripple current sensing means (120) for sensing the ripple in the input AC power, voltage sensing means (110) for sensing the voltage of input AC power and control means (130) configured to control the speed of the motor

(27) for spin drying operation in dependence on the magnitude of the sensed ripple current and on the voltage sensed by the voltage sensing means, characterised in that the control means (130) is configured for operating the motor (27) at a predetermined speed and determining the magnitude of said ripple, from the output of the ripple current sensing means (120), a predetermined time period after the motor (27) has reached said predetermined speed."

II. Notice of opposition was filed against the granted patent, according to which revocation of the patent on the grounds of Articles 100(a) and (b) EPC was requested.

By decision posted on 13 July 2007, the Opposition Division rejected the opposition, holding that the invention was disclosed in a manner such that it could be carried out by a skilled person and that the subject-matter of the independent claims met the requirements of novelty and inventive step when compared with the state of the art represented by:

D1: DE-A-34 16 639
D2: EP-A-0 313 339
D3: EP-A-0 394 177
D4: EP-A-1 048 774
D5: DE-A 26 20 464
D6: EP-A-0 507 138
D7: US-A-2 917 175
D8: Fachbuch: Lexikon der Physik, Herausgeber H. Franke Stuttgart 1952, Seiten 743 und 744, Stichwort "Leistung"

III. Notice of appeal was filed against this decision by the Appellant (Opponent) on 13 September 2007, and the appeal fee was paid on the same day. With its grounds of appeal filed on 14 November 2007 the Appellant pursued its request for revocation of the patent on the ground of lack of inventive step and filed new documents:

D9: DE-A-37 41 791
D10: DE-A-44 31 846
D11: JP-A-04-314496 Abstract

With letter dated 1 October 2008 the Appellant again filed a new document:

D12: EP-A-0 349 798

IV. In a communication accompanying the summons to oral proceedings the Board expressed its preliminary view that the Opposition Division's decision in respect of inventive step appeared correct. A decision would have to be made on the admittance of the new prior art documents.

V. Oral proceedings were held on 30 July 2009.

The Appellant (Opponent) requested that the decision under appeal be set aside and that the European patent No. 1 045 062 be revoked, and that the documents D9 to D12 be admitted into the proceedings.

The Respondent (Patentee) requested that the appeal be dismissed.

VI. In support of its request the Appellant essentially relied upon the following submissions:

The documents D9 to D12 filed in the appeal should be admitted into the proceedings because, since there were no handbooks available dealing with the measurement of the imbalance of rotating drums in washing machines, they represented the general knowledge of the skilled person in this technical field.

The subject-matter of claim 1 was not novel when compared with the disclosure of D5. Although Figure 3 of that document was mistaken in that the speed "n" could not jump up at the end of time period "ta" but would rise from "nl" at t = 0 to "nc" during t = ta, there was a predetermined time period "tb" after which the motor had reached its predetermined speed at which the magnitude of the ripple was measured.

The subject-matter claimed did not involve an inventive step when compared with the combination of D5 and D1. The skilled person was aware of the teachings of D9 in which a predetermined down-time ("Totzeit") was shown after the drum had reached its predetermined measuring speed (Figure 1). Bearing this in mind, it was not inventive, starting from D5, which disclosed essentially the precharacterizing features and the first characterizing feature of claim 1, to apply the determination of a current ripple in a stationary measuring method after the motor had reached its predetermined speed. The feature of the determination of the voltage related to the problem of the motor torque, which was independent from the determination of the current ripple, and would be determined by the skilled

person if necessary. Alternatively the claimed method was also made obvious by the combination of D5 with D10.

VII. The arguments of the Respondent can be summarized as follows:

D5 did not disclose the feature that the magnitude of the current ripple was measured a predetermined time period after the motor had reached its predetermined speed. Neither from the description (pages 9-10) nor from the drawing it could be derived that a predetermined time lapsed after the motor had reached its predetermined speed before the measurement started.

The method and the machine claimed was also inventive since the skilled person was not led to the solution by the combination of the two documents d1 and D5. Moreover, since D5 was cited in D1 as incorporating disadvantages to be improved the skilled person would not combine its teachings with those of D1.

The intended purpose of D10 was the determination of the load within the drum, and therefore the skilled person would not combine that document with the prior art according to D5, which had a different object.

Reasons for the Decision

1. The appeal is admissible.

2. *Prior art documents*

The documents D9 to D12 are admitted into the proceedings as evidence of the general knowledge of the skilled person.

3. *Novelty*

3.1 Novelty was contested based on D5, which document allegedly disclosed all features of claim 1 including the feature that the magnitude of the ripple is determined a predetermined time period after the motor has reached its predetermined speed.

3.2 When comparing the description (page 9, 1st paragraph) with Figure 3, the skilled reader would firstly notice that the drawing is not correct because the rotational speed of the drum cannot rise abruptly from nl to nc instead of following a ramp during time ta. The measurement of the ripple then starts at time tb (page 9, 2nd paragraph). "time tb" as shown in the drawing is not a point in time but represents a time period between ta and tc. From that disclosure it is only derivable that in the time period tb the measurement begins. However, there is no indication as to whether it starts at the beginning of tb or at the end of tb. The only conclusion which can be drawn from the description (page 10, 2nd paragraph) is that the maximum measurement time ends with tc. The measurement time tI in figure 3 is not further defined.

3.3 Considering this disclosure of D5 there is no clear indication at which point of time the measurement of the ripple starts, and therefore the feature in question

cannot derived from D5 since no predetermined time period can be determined before the motor has reached its predetermined speed. Thus, and since no other document was considered more relevant in this respect, the method of claim 1 meets the requirement of novelty (Article 54(2) EPC).

4. *Inventive step*

4.1 The closest prior art document D5 discloses a method of performing spin drying using a washing machine having a drum driving motor 6, the method comprising the steps of determining the magnitude of a current ripple in the AC power input to the washing machine for driving the motor, determining that this magnitude is below a threshold value and controlling the speed of the motor in dependence on this ripple magnitude, wherein the motor is operated at a predetermined speed when determining the magnitude of said ripple (claim 1, claim 4).

4.2 The problem underlying the invention can be seen in an improvement of the measurement of the imbalance of the drum, independent from variations in the voltage. The problem is solved by the features of claim 1, in particular by determining the voltage of the AC power and controlling the speed of the motor in dependence on the ripple magnitude and on the voltage and determining the magnitude of the ripple a predetermined time period after the motor has reached this predetermined speed. Another solution to the problem is claimed in claim 4, comprising the means for carrying out the method of claim 1.

4.3 The Appellant argued that the skilled person starting from D5 would find a suitable solution in D1, and by the combination of these teachings would be led to the claimed solutions. However, considering the fact that D5 is cited as prior art to be improved in D1, the question arises whether he would retain the features of D5 unchanged and combine them with those of D1. Although it might be comprised within the general knowledge to measure the voltage of the motor in order to compensate for variations of the motor torque, the determination of the current ripple for detecting the imbalance of the rotating drum in D1 is achieved in a different manner than in D5. According to D5 the determination of the current ripple is done after the motor has reached the predetermined constant rotational speed nc (Figure 3), whereas according to D1 it is done during the acceleration time tA of the motor from nw to na (Figure 1, page 5, 2nd paragraph). Since the inventor of D1, starting from the stationary detecting method of D5, has turned to a dynamic detecting method, it is not apparent why he should return to the prior art method which he wanted to improve in combination with the determination of the voltage. Therefore he would primarily not be prompted to combine their teachings. Moreover, even if he tried to combine D5 with D1, he would not be led to the feature that the magnitude of the ripple is determined a predetermined time period after the motor has reached its predetermined speed (see point 3.3 above).

4.4 The Appellant argued further based on the general knowledge represented by D9 to D12, according to which the skilled person would be aware of the fact that the accuracy of the measurement of a current ripple could be

improved by starting it after a setting time (Einschwingzeit). However, these documents deal with the technical problem of the measurement of the imbalance of drums in washing machines in configurations which are different from that underlying the invention, and therefore no direct hint can be derived from them to isolate only one specific feature out of their combination and to apply it in a different method or embodiment.

4.5 In its second line of attack the Appellant relied on the combination of D5 with D10. The problem dealt with in D10 is the determination of the load of the drum independent of the influence of friction within the machine. According to one embodiment a value of the imbalance can be determined during the acceleration of the drum independent of the load, and the dry spinning speed can be adapted (column 4, lines 53 to 60). Also by that combination, at least the last characterizing feature is not arrived at since any suggestion towards this measure is lacking. Thus it follows that the method of claim 1 involves an inventive step (Article 56 EPC).

4.6 Independent claim 4 relates to a washing machine comprising the technical means for carrying out the method of claim 1. The claimed combination of features is not arrived at by any combination of the documents as discussed above, in particular the skilled person would not be led to the characterizing feature that the control means is configured for operating the motor at a predetermined speed and determining the magnitude of the ripple, from the output of the ripple current sensing means, a predetermined time period after the motor has

reached its predetermined speed. Thus the subject-matter claimed is also inventive.

4.7 Since the dependent claims 2 to 3 and 5 to 6 also meet the requirements of the EPC the patent can be maintained in the form as granted (Article 52(1) EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Patin P. Alting van Geusau