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**Datasheet for the decision
of 30 June 2010**

Case Number: T 2100/08 - 3.2.06

Application Number: 01305153.7

Publication Number: 1164215

IPC: D06F 39/00

Language of the proceedings: EN

Title of invention:

Washing machine

Patentee:

LG Electronics, Inc.

Opponent:

Miele & Cie. KG
BSH Bosch und Siemens Hausgeräte GmbH

Headword:

-

Relevant legal provisions:

-

Relevant legal provisions (EPC 1973):

EPC Art. 100(c), 56

Keyword:

"Added subject-matter (patent as granted)"
"Inventive step - yes (amended claims)"

Decisions cited:

-

Catchword:

-



Case Number: T 2100/08 - 3.2.06

DECISION
of the Technical Board of Appeal 3.2.06
of 30 June 2010

Appellant 1: Miele & Cie. KG
(Opponent 1) Schutzrechte/Verträge
Carl-Miele-Strasse 29
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Representative: -

Appellant 2: BSH Bosch und Siemens Hausgeräte GmbH
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Representative: -

Respondent: LG Electronics, Inc.
(Patent Proprietor) 20, Yoido-Dong, Youngdungpo-gu
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Representative: McLeish, Nicholas Alistair Maxwell
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
2 September 2008 concerning maintenance of
European patent No. 1164215 in amended form.

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. Pricolo
K. Garnett

Summary of Facts and Submissions

I. The appeal is from the decision of the Opposition Division posted on 2 September 2008 to reject the opposition filed against European patent No. 1 164 215 granted in respect of European patent application No. 01 305 153.7.

II. Claim 1 as granted reads as follows:

"1. A washing machine comprising: a storage tank mounted vertically or horizontally for storing washing water; an inner tub mounted vertically or horizontally inside the storage tank in a rotatable manner; a load part (21) including a motor (20) for rotating the inner tub, water supply means for supplying water, and drain means for draining water; a key input part (23) for allowing a user to input various operation orders or to set functions of the washing machine; a display part (24) for displaying the functions and operation conditions; a memory (25) capable of reading and writing and for storing operation algorithms of the washing machine and information related with the washing machine; and an interface part (26) for inputting and outputting data with an external device (31), the washing machine characterised by: a drive micom (22) for controlling the load part (20, 21); said information related with the washing machine comprising use records of the washing machine and operation conditions of various loads of the load part; and a system micom (27) for controlling the drive micom (22) for performing a washing operation corresponding to the user's operation order through the key input part (23), controlling the display part (24) for displaying the

corresponding operation condition or function, the system micom (27) configured to read the stored information related with the washing machine from the memory (25) and upload it to an external device (31) when connected."

III. In coming to its decision the Opposition Division held that the subject-matter of the European patent did not extend beyond the content of the application as filed (Article 100(c) EPC) and that the claimed subject-matter was novel and inventive over the available prior art (Article 100(a) EPC) including:

O2D2: GB-A-2 253 074;

O2D6: EP-A-391 316.

In its decision (point 9.1.6) the Opposition Division considered that the term "micom" recited in claim 1 meant "processor" and that claim 1 required the presence of two separate processors, a first (the drive micom) for controlling the load part and a second (the system micom) for controlling the first processor.

IV. The appellants I and II (opponents I and II) lodged an appeal against this decision, received at the EPO on 29 October and 3 November 2008, respectively. Payment of the appeal fee was recorded on the same days. With the statements setting out the grounds of appeal, both received at the EPO on 12 January 2009, the appellants filed further documents including:

O1D6: HEA Bilderdienst 6.5.1. Waschmaschinen, October 1998, pages 1, 2 and 19 - 26; (filed by appellant I) and

O2D15: DE-A-33 24 482 (filed by appellant II).

V. In an annex to the summons for oral proceedings pursuant to Article 15(1) Rules of Procedure of the boards of appeal the Board expressed the preliminary opinion that the subject-matter of granted claim 1 extended beyond the content of the application as filed because it did not include the feature "storing data transferred from the external device through the interface part into the memory" which was recited in originally filed claim 1.

VI. Oral proceedings, at the end of which the decision of the Board was announced, took place on 30 June 2010.

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

The respondent (patentee) requested that the appeal be dismissed, alternatively that the decision under appeal be set aside and the patent be maintained on the basis of the request filed during the oral proceedings.

VII. Claim 1 according to the respondent's request filed during the oral proceedings reads as follows:

"1. A washing machine comprising: a storage tank mounted vertically or horizontally for storing washing water; an inner tub mounted vertically or horizontally inside the storage tank in a rotatable manner; a load

part including a motor (20) for rotating the inner tub, water supply means for supplying water, and drain means for draining water; a key input part (23) for allowing a user to input various operation orders or to set functions of the washing machine; a display part (24) for displaying the functions and operation conditions; a memory (25) capable of reading and writing and for storing operation algorithms of the washing machine and information related with the washing machine; and an interface part (26) for inputting and outputting data with an external device (31); a drive micom (22) for controlling the load part; said information related with the washing machine comprising use records of the washing machine and operation conditions of various loads of the load part; and a system micom (27) for controlling the drive micom (22) for performing a washing operation corresponding to the user's operation order through the key input part (23), controlling the display part (24) for displaying the corresponding operation condition or function, and storing data transferred from an external device through the interface part into the memory, the system micom (27) configured to read the stored information related with the washing machine from the memory (25) and upload it to an external device (31) when connected."

VIII. The appellants' arguments may be summarised as follows:

The subject-matter of granted claim 1 extended beyond the content of the application as filed because it did not include the feature "storing data transferred from the external device through the interface part into the memory" which was recited in originally filed claim 1.

As regards claim 1 as filed during the oral proceedings, its subject-matter did not involve an inventive step. The term "micom" was not a standard term in the art and did not necessarily mean "microcomputer". In fact, the functions of the "drive micom" and of the "system micom" referred to in claim 1 could well be implemented by the same microcomputer. In any case, document O2D2 disclosed the use of first and second control devices. The second control device was for controlling the motor, whilst the first control device was for controlling the display part, the water supply means and the drain means. It was obvious for the skilled person that the second control device could be used for controlling the water supply means and the drain means in addition to the motor, thus arriving at an arrangement corresponding to that of claim 1 comprising a drive micom for controlling the load part and a system micom for controlling the drive micom and the display part. O2D2 was silent about downloading data from, and uploading data to, an external device. These features were however known from O2D6, which disclosed downloading programs into the memory of the washing machine and uploading data for testing and diagnostic purposes. Furthermore, it was generally known in the art, as documented e.g. by O1D6, that electronically controlled washing machines were suitable for displaying malfunctions and downloading data for modifying the stored washing programs. Accordingly, the skilled person would arrive at the subject-matter of claim 1 without the exercise of an inventive activity.

IX. The respondent's arguments can be summarised as follows:

Claim 1 as granted did not extend beyond the content of the application as filed because the removal of the feature "storing data transferred from the external device through the interface part into the memory" from original claim 1 met the three-point test referred to in T 331/87: the feature was not explained as essential in the disclosure, it was not, as such, indispensable for the function of the invention in the light of the technical problem it served to solve, and the replacement or removal required no real modification of other features to compensate for the change.

It was clear for a skilled person that the term "micom" was an abbreviation of "microcomputer". This was moreover supported by the description of the patent in suit which consistently referred to the presence of two microprocessors and to the transfer of data between the drive micom and the system micom.

Starting from the closest prior art represented by O2D2, the washing machine according to claim 1 as filed during the oral proceedings allowed for ongoing diagnostic and repair, since data relating to the use of the washing machine could be transferred to an external device for evaluation and data relating to the operation of the washing machine could be downloaded into the memory as a result of the evaluation. The combination of features of claim 1 was not rendered obvious by the prior art. O2D6 was primarily concerned with downloading washing programs into the memory of a control unit before installing the control unit in a washing machine, i.e. before putting the washing

machine in operation. Old6 disclosed the possibility of updating the stored washing programs, but did not suggest the download of programs as a consequence of uploading data relating to the use of the washing machine.

Reasons for the Decision

1. The appeal is admissible.
2. *The patent as granted*
 - 2.1 Claim 1 as originally filed recites that the system micom is capable of "storing data transferred from the external device through the interface part into the memory". In other words, the system micom is configured to *download* data from the external device into the memory. This feature is not present in claim 1 as granted.
 - 2.2 The Opposition Division took the view that the application as filed discloses two independent alternatives: a machine which can be updated by downloading data from an external device and a machine from which data can be uploaded to the external device essentially for diagnostic purposes (see par. 8.3.3 of the decision under appeal). Claim 1 states that the system micom is configured to *upload* stored information from the memory to an external device when connected and therefore is only concerned with the latter alternative. However, the view of the Opposition Division cannot be followed.

2.3 The application as filed (reference is made to the A2 publication) discloses that in conventional washing machines (see par. [0016] and [0017]) it is difficult to grasp the causes of malfunctions and it is not possible to change washing programs stored in memory. Accordingly, the problems underlying the invention (see par. [0018] to [0020]) are to provide a washing machine *"capable of replacing or changing set programs with programs suitable for a change of family members, a change of life patterns and a change of season"*; to solve *"malfunctions by grasping use records of the washing machine and use records of each component of the washing machine and grasping causes of malfunctions"*; to obtain *"washing information for a more developed washing machine by grasping washing patterns preferred by users, washing records and causes of malfunctions"*. The solution to these problems includes storing data transferred from the external device into the memory (see claim 1 ; see par. [0021]), i.e. downloading data. This aspect is not only relevant for the first of the above-mentioned problems, but also plays a role for the solution of the other problem related to solving malfunctions. Indeed the application as filed discloses that malfunctions are not necessarily due to product defects but may well depend on the use environments (see par. [0012] and [0017]), whereby these "malfunctions" can only be solved by changing stored programs. Also, the aspect of uploading data for diagnostic purposes is not presented independently of the aspect of downloading data, since if a detected malfunction is not caused by a defect of the washing machine but by use environment, then it is solved by downloading a new washing program. Therefore, the application as filed does not relate to the two

independent alternatives identified by the Opposition Division, but, in its broader form, to a washing machine which can be updated by downloading data. According to a particular embodiment, the washing machine can (additionally) upload data for diagnostic purposes.

2.4 The detailed description of the preferred embodiments does not allow for a different view; in particular par. [0047] referred to by the Opposition Division does not support the alternative nature of the two aspects but discloses that both functions are performed by a same machine.

2.5 Since from the above it is clear that the feature of "storing data transferred from the external device through the interface part into the memory" is indispensable for the function of the invention in the light of the technical problem it serves to solve, the removal of this feature from claim 1 as originally filed does not meet the "three-point" test referred to by the respondent.

2.6 For these reasons the subject-matter of claim 1 as granted extends beyond the content of the application as filed (Article 100(c) EPC). Therefore, the patent cannot be maintained as granted and the decision under appeal must be set aside.

3. *The main request filed during the oral proceedings*

3.1 *Amendments*

3.1.1 Claim 1 is amended over claim 1 as granted by including the above-mentioned feature of "storing data transferred from an external device through the interface part into the memory". With this amendment, claim 1 includes all the features of claim 1 as originally filed.

Furthermore, claim 1 is amended over claim 1 as granted by deleting the reference signs 21 and 20,21 after the term "load part", and by deleting the expression "the washing machine characterised by". These amendments do not affect the subject-matter of claim 1, since they concern the reference signs and the two-part form of the claim.

3.1.2 With respect to claim 1 as originally filed, claim 1 includes the following additional features:

(i) "said information related with the washing machine comprising use records of the washing machine and operation conditions of various loads of the load part";
and

(ii) "the system micom configured to read the stored information related with the washing machine from the memory and upload it to an external device when connected".

In their statement of grounds of appeal, the appellants raised objections concerning the presence of these

features in claim 1 as granted. These objections were not pursued during the oral proceedings in respect of the amended claim. As already explained by the Board in the annex to the summons for oral proceedings, the introduction of these features does not result in subject-matter extending beyond the content of the application as filed. A suitable basis for introducing feature (i) is found in claim 7 and par. [0019] of the application as filed. As regards feature (ii), the Board agrees with the Opposition Division's view concerning the interpretation of the term "when connected" (see point 8.1.1 of the decision under appeal). In the present context this term implies that a connection with the external device must be present for an upload to take place; it does not indicate a specific time at which the upload takes place. Given this interpretation, the basis for introducing this feature is found in claim 7, which generally relates to an "external device".

- 3.1.3 The description has been amended to acknowledge the prior art documents O2D2 and O2D6.
- 3.1.4 Therefore, the amendments meet the requirements of Article 123(2) EPC.
- 3.1.5 Claim 1 having been amended over claim 1 as granted in substance only by the addition of a feature, the amendments do not extend the protection conferred by the European patent and therefore also meet the requirements of Article 123(3) EPC.

3.2 *Novelty*

The appellants did not dispute the novelty of the claimed subject-matter. The Board has no reason to take a different position.

3.3 *Inventive step*

- 3.3.1 The Board agrees with the view of the Opposition Division that the term "micom" means a control device comprising a microprocessor and that claim 1 requires the presence of two such control devices, i.e. of two microprocessors, one for the drive micom and one for the system micom. It is indeed clear for the skilled person that the claimed washing machine is controlled by a microprocessor, since it is provided with a memory capable of reading and writing data and for storing operation algorithms of the washing machine. Accordingly, it is clear for the skilled person that the term "micom" is an abbreviation of "microcomputer". Furthermore, by defining a "drive micom" and a "system micom", and defining that the system micom controls the drive micom, claim 1 makes it clear that two microprocessors are provided. This reading, which is the normal reading of claim 1, is supported by the description and the figures of the patent. Figs. 2 and 3 indeed show two separate micoms and par. [0030] and [0032] specify that data is exchanged between the micoms. This reading is not contradicted by claim 7 (which wording is identical to that of claim 7 as granted), according to which the "system micom is integrated with at least one of the memory and the drive micom", and by the embodiments of Figs. 4 and 5, showing the drive micom mounted inside the system micom.

Claim 7 and Figs. 4 and 5 indeed refer to an arrangement in which the system micom and the drive micom are integrated in a single physical unit. This is supported in particular by the passages in par. [0044] and [0047] of the description, according to which the drive micom is *mounted* inside the system micom (as is the memory in the embodiment of Fig. 5), whereby it is clear that the drive micom represents a separate physical entity. Accordingly, claim 1 cannot be read as including the possibility that there is one single micom performing both the functions of a drive micom and system micom.

- 3.3.2 Document O2D2 undisputedly represents the closest prior art. It relates to a washing machine comprising a system micom which controls a drive micom. Using the wording of the patent in suit, O2D2 discloses (see Figs. 2 and 3) a washing machine comprising: a storage tank (2) mounted vertically for storing washing water; an inner tub (8) mounted vertically inside the storage tank in a rotatable manner; a load part including a motor (3) for rotating the inner tub, water supply means (12) for supplying water, and drain means (5, 6) for draining water; a key input part (16) for allowing a user to input various operation orders or to set functions of the washing machine (see page 7, lines 2-4); a display part (18) for displaying the functions and operation conditions; a memory (11a) capable of reading and in which operation algorithms of the washing machine are stored (see page 6, lines 8-10); a drive micom (15) for controlling the motor (see page 5, lines 26, 27); and a system micom (11) for controlling the drive micom (15) for performing a washing operation corresponding to the user's operation order through the

key input part (16; see page 6, lines 8-21), and controlling the display part (18) for displaying the corresponding operation condition or function.

The subject-matter of claim 1 differs from the known washing machine by the following features:

- (i) in addition to the motor for rotating the inner tub, the drive micom also controls other components of the load part, namely the water supply means for supplying water, and the drain means for draining water;
- (ii) the memory is capable not only of reading but also of writing and storing operation algorithms of the washing machine and information related with the washing machine;
- (iii) the washing machine comprises an interface part for inputting and outputting data with an external device;
- (iv) said information related with the washing machine comprises use records of the washing machine and operation conditions of various loads of the load part;
- (v) the system micom is capable of storing data transferred from an external device through the interface part into the memory;
- (vi) the system micom is configured to read the stored information related with the washing machine from the memory and upload it to an external device when connected.

3.3.3 The distinguishing features (ii) to (iv) and (vi) allow an external device to read use records of the washing machine and operation conditions of various loads of the load part. The distinguishing features (ii), (iii) and (v) allow storing operation algorithms into the memory. In this respect, as was pointed out by the

Board during the oral proceedings, it must be noted that the "data" transferred from the external device through the interface part into the memory (see feature (v)) necessarily include operation algorithms. Claim 1 indeed specifies that the memory stores operation algorithms of the washing machine and information related with the washing machine, whereby the information comprises use records of the washing machine and operation conditions of various loads of the load part. Since the data transferred from the external device cannot be the use records or the operation conditions (as this is information generated by the washing machine for being uploaded to the external device), it necessarily includes the operation algorithms.

Therefore, the distinguishing features (ii) to (vi) allow information to be obtained relating to the use of the washing machine and storing operation algorithms, i.e. programs, in response to such information. These distinguishing features thus solve the problem of allowing an ongoing diagnostic and repair (intended generally as the removal of malfunctions: see in this respect section 2.2 of this decision) of the washing machine.

Feature (i) results in an alternative layout of the electronic control unit. There is no apparent technical relationship between feature (i) and the other distinguishing features (ii) to (vi).

- 3.3.4 Document O2D6 relates to an electronic control unit capable of being adapted to a plurality of washing machine models for controlling the operation thereof

(see col. 1, lines 1-4). The control unit (1, see the figure) comprises a master microprocessor (2) with a memory EEPROM (8) adapted to store washing programs (see col. 2, lines 25-32). The washing programs are transferred into the memory from a personal computer (39) or another suitable electronic programming apparatus through an interface (36; see col. 6, lines 27 to 42), prior to installation of the control unit into the washing machine (see col. 1, lines 35 to 42). The control unit further comprises slave microprocessors (3, 4, 5), one of which is devised to ascertain the correct operation of the electric components, and to transmit corresponding coded signals to the master microprocessor, which then activates the corresponding displays or acoustic signal devices of the machine to thereby advise the user of the occurrence of the malfunction (see col. 5, lines 32 to 40). Finally, the control unit comprises an interface (35) used by maintenance personnel servicing the washing machine for ascertaining the correct functionality and for analysing and eliminating any possible malfunctions (see col. 6, lines 8-20), by reading corresponding encoded signals of a diagnosis programme stored in the EEPROM (8) of the master microprocessor (see col. 6, lines 21-26). These signals are generated when a diagnosis programme stored in a ROM memory (7) of the master microprocessor (2) is executed (see col. 2, lines 48 to 57). Accordingly, O2D6 discloses a control unit in which different washing programs can be stored in a memory depending on the model of washing machine in which the control unit is to be installed, thus before the washing machine is operative, and which allows an external device to read from the memory the information generated by a

diagnosis program when the latter is executed for servicing purposes. There is no indication in O2D6 suggesting (a) storing use records of the washing machine in the memory, and (b) storing washing programs in the memory after installation of the control unit in the washing machine, thus allowing for removal of a cause of malfunction due to washing programs that are inappropriate for the specific use environment of a particular washing machine (see in this respect par. [0009] to [0013] and [0016] and [0017] of the patent in suit). In fact, there is no indication in O2D6 that the interface (36) through which washing programs are downloaded may even be accessible once the control unit is installed in a washing machine.

The opponents further referred to the common general knowledge of the person skilled in the art, and in particular to document O1D6 as being representative thereof. O1D6 refers to wholly electronically controlled washing machines ("Vollelektroniksteuerung", see page 24 of O1D6, first column) which allow the displaying of malfunctions and the downloading of new software (see page 24, second and third columns). The teaching of O1D6 is however limited to updating the software such that the washing machine is always provided with the latest washing techniques (see page 24, col. 3). There is no indication in O1D6 suggesting that the downloading of new software may be made dependent on the use records and operation conditions of a specific washing machine.

During the oral proceedings the opponents also referred to document O2D15 in respect of the feature that the control unit consists of first and second

microprocessors (first and second micoms). This feature is however known from the closest prior art O2D2, and O2D15 is irrelevant in respect of the above-mentioned distinguishing features (ii) to (v) because it is silent about downloading and uploading of data.

For these reasons the subject-matter of claim 1 is not rendered obvious by the prior art cited by the opponents. Since this conclusion is reached without considering the further distinguishing feature (i), which effect is independent of the effect of the distinguishing features (ii) to (iv), there is no need here to discuss whether this feature is obvious.

Therefore, the subject-matter of claim 1, and of dependent claims 2 to 7, involves an inventive step (Article 56 EPC).

- 3.4 From the above it follows that the documents according to the main request filed during the oral proceedings form 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 Opposition Division with the order to maintain the patent on the basis of:
 - (a) Claims 1 to 7 according to the main request filed during the oral proceedings;
 - (b) The description pages numbered 2 to 5, plus Riders A and B to page numbered 3, as filed during the oral proceedings;
 - (c) Figures 1 to 5 as granted.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau