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Datasheet for the decision
of 6 November 2018

Case Number: T 1919/14 - 3.2.06
Application Number: 09719882.4
Publication Number: 2260136
IPC: D06F37/20, D06F58/28
Language of the proceedings: EN

Title of invention:
A METHOD FOR PROCESSING LAUNDRY, AND A LAUNDRY PROCESSING DEVICE

Patent Proprietor:
Aktiebolaget Electrolux

Opponent:
BSH Hausgeräte GmbH

Headword:

Relevant legal provisions:
EPC Art. 54, 111(1)
RPBA Art. 13(1)
Keyword:
Novelty - Main request, auxiliary request 4(new) - no;
auxiliary request 4a(new) - yes
Remittal to the department of first instance - (yes)

Decisions cited:

Catchword:
Decision of Technical Board of Appeal 3.2.06
of 6 November 2018

Appellant: BSH Hausgeräte GmbH
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Decision under appeal: Decision of the Opposition Division of the European Patent Office posted on 25 July 2014 rejecting the opposition filed against European patent No. 2260136 pursuant to Article 101(2) EPC.

Composition of the Board:
Chairman: M. Harrison
Members: M. Hannam
E. Kossonakou
Summary of Facts and Submissions

I. An appeal was filed by the appellant (opponent) against the decision of the opposition division rejecting the opposition to European patent No. 2 260 136. It requested that the decision be set aside and the patent be revoked.

II. In its letter of response, the respondent (patent proprietor) requested that the appeal be dismissed or that the patent be maintained according to one of auxiliary requests 1 to 7.

III. The following documents, referred to by the parties in their submissions, are relevant to the present decision:

D2 EP-A-1 609 901
D7 DE-A-196 19 603

IV. In its letter of 8 March 2016 the appellant presented novelty arguments on the basis of D8 for the first time:

D8 DE-A-38 24 799

V. With letter of 28 March 2018 the respondent filed auxiliary requests 2a, 3a and 7a to replace auxiliary requests 2, 3 and 7 previously on file.

VI. The Board issued a summons to oral proceedings and a subsequent communication containing its provisional opinion, in which it indicated inter alia that the subject-matter of claim 1 of the main request appeared to lack novelty as did that of auxiliary request 4.
VII. With letter of 16 October 2018 the respondent filed auxiliary request 4a and changed the order of the requests on file.

VIII. Oral proceedings were held before the Board on 6 November 2018, during which the respondent filed auxiliary request 4(new) and 4a(new) to replace auxiliary request 4 and 4a previously on file. The final requests of the parties were as follows:

The appellant requested that the decision under appeal be set aside and the European patent No. 2 260 136 be revoked.

The respondent requested that the appeal be dismissed (main request) or that the patent be maintained in amended form on the basis of one of new auxiliary requests 4 and 4a or one of auxiliary requests 7a, 2a, 3a, 5, 6 or 1.

IX. Claim 1 of the main request (form as granted) reads as follows:

"A method for controlling the processing of laundry in a laundry processing device (110, 210, 510), the device (110, 210, 510) comprising a drum (112, 312, 512), adapted to accommodate laundry (114, 314, 514) and being rotatably mounted on a support so as to be rotated about a substantially horizontal axis; a motor (336, 536), arranged for rotating the drum (112, 312, 512); and a controller (340, 540), adapted for controlling the rotary speed of the drum (112, 312, 512), the method comprising initiating (210), when the drum (112, 312, 512) contains laundry (114, 314, 514), a rotation of the drum (112, 312, 512) by means of the motor (336, 536),
and being characterized by
recording (212), while the laundry is being processed,
a signal that is correlated to the interaction between
the drum (112, 312, 512) and the laundry (114, 314,
514), and that exhibits a variation caused by the
rotation of the drum (112, 312, 512);
on the basis of the signal and a desired process
result, determining (214) a target rotary speed of the
drum (112, 312, 512); and
adjusting (216) the rotary speed of the drum (112, 312,
512) to the target rotary speed
wherein the target rotary speed is selected based on a
desired level of mechanical action on the laundry (114,
314, 514)."

Claim 1 of auxiliary request 4(new) reads as claim 1 of
the main request with the following features appended:

"wherein the laundry processing device further
comprises a drain valve (344), and the method is
performed while the drain valve (344) is closed and the
drum (112, 312) contains a level of washing fluid; or
wherein the laundry processing device is a tumble dryer
(510)."

Claim 1 of auxiliary request 4a(new) reads as claim 1 of
auxiliary request 4(new) with the following feature
deleted therefrom:

"or wherein the laundry processing device is a tumble
dryer (510)."

Claim 5 of auxiliary request 4a(new) reads as follows:

"A laundry processing device comprising a drum (112,
312, 512), adapted to accommodate laundry (114, 314,
514) and being rotatably mounted on a support so as to be rotated about a substantially horizontal axis; a motor (336, 536), arranged for rotating the drum (112, 312, 512); and a controller (340, 540), adapted for controlling the rotary speed of the drum (112, 312, 512), the laundry processing device (110, 210, 510) being characterized by comprising means (346) arranged and configured for recording, while the laundry (114, 314, 514) is being processed, a signal that is correlated to the interaction between the drum (112, 312, 512) and the laundry (114, 314, 514), and that exhibits a variation caused by the rotation of the drum (112, 312, 512); and means (340, 540) arranged and configured for determining, on the basis of the signal and a desired process result, a target rotary speed of the drum (112, 312, 512), wherein the device (110, 210, 510) is configured and arranged select the target rotary speed based on a desired level of mechanical action on the laundry (114, 314, 514);

further comprising a drain valve (344), wherein the device (110, 210) is configured and arranged to adjust the speed of the drum (112, 312) to the target rotary speed while the drain valve (344) is closed and the drum (112, 312) contains a level of washing fluid."

X. The appellant's arguments relevant to the present decision may be summarised as follows:

Main request
The subject-matter of claim 1 lacked novelty over D2. Paragraph [0038] unambiguously showed that the laundry device of D2 had a drum rotating about a horizontal axis. Paragraph [0012] of the opposed patent disclosed laundry adhered to the inner surface of the drum as
still being subject to mechanical action, albeit at a limited level. Wishing to achieve such a level of mechanical action, D2 disclosed a target rotary speed for the drum; even if this speed were never reached and the actual drum speed 'jumped' above and below it, it still represented a target rotary speed.

Auxiliary request 4(new)
The subject-matter of claim 1 still lacked novelty. D2 disclosed a washer-dryer and it was common knowledge that every washer-dryer was a tumble dryer due to the laundry movement during the drying cycle.

Auxiliary request 4a (new)
The subject-matter of claim 1 lacked novelty over D7. Col. 4, lines 1 to 12 indicated that the drum rotated about a substantially horizontal axis and the figures, being schematic, did not allow any conclusion to be drawn as regards a lack of water in the drum. As regards determining a target rotary speed, the patent did not require a rotary speed be calculated, rather simply choosing an appropriate speed from the recorded signals sufficed. Even if the movement of the drum in D7 followed a preset speed profile, the controller still had to determine how to coordinate the speed profile with the lifter position which was a step of 'determining a target rotary speed of the drum'. This synchronisation would require repeating this determination at every passage of each lifter past a particular point.

The case should be remitted to the opposition division for discussion of inventive step objections.

XI. The respondent's arguments relevant to the present decision may be summarised as follows:
Main request
The subject-matter of claim 1 was novel over D2. D2 failed to disclose a horizontal rotation axis and a mechanical action on the laundry, at least when all the laundry adhered to the drum wall. The signal correlated to the interaction between drum and laundry in D2 also did not vary. The method of D2 failed to determine a target rotary speed on the basis of a signal correlated to the interaction between the drum and the laundry since no final speed was reached, the speed continuously varying higher or lower on an iterative basis. Even if the reference speed in Fig. 3 of D2 were to be considered, this was not a single target speed due to the stepwise increasing or decreasing of the speed each side of the reference. In D2 it was never known whether any speed had been reached which was a target speed, nor what the result of the step changes in speed would be until they were carried out. D2 also failed to record a signal, for example an analogue discriminator would have sufficed for the required value comparison.

Auxiliary request 4(new)
The subject-matter of claim 1 was new over D2. From the patent as a whole it was clear that the term 'tumble dryer' in claim 1 was to be understood as a stand-alone device differing from a washer-dryer. In this regard the expression tumble dryer was not a generic term which would encompass washer-dryers.

Auxiliary request 4a(new)
The subject-matter of claim 1 was new over D7. This document lacked even an implicit disclosure of the drum rotating about a horizontal axis and there was also no disclosure of a level of washing fluid in the drum
while the method was being performed. D7 also failed to disclose the speed being determined on the basis of the recorded signal, this instead being dictated by a preset speed profile which simply required synchronisation with the first and second positions of the lifters.
This request should be remitted to the opposition division for discussion of inventive step objections.

Reasons for the Decision

1. Main request

1.1 Novelty

The subject-matter of claim 1 is not new contrary to the requirement of Article 54 EPC.

1.1.1 The Board finds, and there was no disagreement between the parties, that D2 discloses the following features of claim 1, the references in parentheses referring to D2:

A method for controlling the processing of laundry in a laundry processing device (see e.g. paragraph [0001], claim 1 and Figure 2), the device (see e.g. paragraph [0019]) comprising a drum adapted to accommodate laundry and being rotatably mounted on a support; a motor (see e.g. paragraph [0024]), arranged for rotating the drum; and a controller, adapted for controlling the rotary speed of the drum (see e.g. paragraph [0029]), the method comprising initiating (see e.g. 'Block 1' in paragraph [0055] and Figure 2), when the drum contains laundry, a rotation of the drum (see e.g. 'Block 2') by means of the motor.
1.1.2 The Board also finds that the further features of claim 1 are known from D2. These further features are anticipated in D2 specifically when going from a state where nearly all the laundry is adhered to the inner surface of the drum to the state where indeed all the laundry is adhered, as follows:

- the drum is rotated about a substantially horizontal axis (see paragraph [0038] in which the formula incorporating the unbalanced mass lacks a component in the horizontal direction such that the rotation axis cannot be inclined to the horizontal);
- recording ($T_{ELEVATION}$ is calculated in 'Block 5' of Fig. 2, then used in an evaluation in 'Block 7' such that it must, even if only temporarily, be recorded), while the laundry is being processed, a signal ($T_{ELEVATION}$) that is correlated to the interaction between the drum and the laundry (see page 4, lines 7 to 8), and that exhibits a variation caused by the rotation of the drum ($T_{ELEVATION}$ will vary with rotation of the drum due to motor torque changing with angle of lifter/laundery to the rotation axis);
- on the basis of the signal ($T_{ELEVATION}$) and a desired process result (to retain the not yet retained laundry to the drum inner surface), determining (see 'block 9' and 'block 10' in Fig. 2) a target rotary speed of the drum (e.g. simply a higher rotary speed); and
- adjusting (see 'block 10') the rotary speed of the drum to the target rotary speed (e.g. the higher rotary speed), wherein the target rotary speed is selected based on a desired level of mechanical action on the laundry (the desired level of mechanical action being to retain all the laundry on the drum inner surface).
1.1.3 The respondent's argument that the laundry in D2 did not experience mechanical action when adhered to the drum wall is not accepted. Even in paragraph [0012] of the patent, an example of mechanical action on the laundry is discussed in which 'the laundry will not drop through the drum' i.e. the laundry is fully retained on the drum inner surface. This is described as the laundry being exposed to 'a very low mechanical action'. Thus, the laundry being retained on the drum inner surface in D2 is still subjected to a mechanical action, as indeed defined in the patent itself.

1.1.4 The respondent's contention that the signal correlated to the interaction between drum and laundry in D2 did not vary is unconvincing. The signal in question in D2 is that named 'T_{ELEVATION}' which relates to the torque at the drum axis resulting from raising the portion of the laundry load that is not yet retained on the drum inner surface (see page 4, lines 7 to 8). Such laundry will be picked-up by a lifter near the lowest drum rotation position and will be moved with the lifter as it rotates about the rotation axis. When at the lowest position of the drum, the torque required to move the laundry will be small (the laundry essentially undergoing a horizontal movement) compared to that required when the laundry has been rotated through 90° and is being moved essentially vertically, this due to the effect of gravity acting on the laundry. It is thus clear that the signal correlated to the interaction between drum and laundry in D2 (i.e. 'T_{ELEVATION}') does indeed vary continuously, dependent upon the angular position in the drum of the laundry not yet retained on the drum inner surface.

1.1.5 The respondent's argument that D2 failed to determine a target rotary speed since no final speed was reached is
not accepted. In this regard it is noted that the 'target rotary speed of the drum' is very broadly defined in claim 1 of the patent, it being determined solely on the basis of 'the signal' and by 'a desired process result'. In D2, 'the signal' is considered to be 'TELEVATION' and its specific value for the purpose of establishing the target rotary speed of the drum is taken as that when nearly, but not quite all the laundry is retained on the drum inner surface i.e. a minimal amount of laundry tumbling is still occurring ('Block 9' in Fig. 2). As regards 'a desired process result', this is to have all the laundry retained on the drum inner surface in order to allow spinning to commence (provided that the unbalance mass m is below the threshold value S and that TELEVATION is below the allowable maximum). Therefore, in view of the breadth of interpretation possible, the 'target rotary speed of the drum' in D2 can be taken as the speed at which all of the laundry is retained on the drum inner surface. As regards the respondent's argument that D2 never reaches its 'target rotary speed', this is irrelevant for the feature to nonetheless be known. The 'target rotary speed' is just that: a target. Provided that the method of D2 has a rotary speed which is targeted, this feature is anticipated, even if precisely the targeted rotary speed is never reached. The respondent's reference to the line denoted 'reference speed' in Fig. 3 of D2 changes nothing in this regard, since the stepwise increasing and decreasing of the speed each side of the reference speed clearly depicts how the method of D2 has a target rotary speed of the drum, even if this speed is never precisely achieved.

1.1.6 The respondent's suggestion that it was never known in D2 whether the target speed had been reached is found also to be the case in claim 1 of the patent. The
method step in claim 1 states 'adjusting the rotary speed of the drum to the target rotary speed'. There is no indication that the adjustment is carried out until the target rotary speed is met, rather simply that the drum rotary speed is adjusted to the target rotary speed, which condition is satisfied by the speed being adjusted towards the target rotary speed. A definitive reaching of the target rotary speed is not seen as included in the wording of claim 1.

1.1.7 As regards the alleged inability to know in advance what the process result of the step changes in speed would be in D2, this is also not accepted. As indicated in point 1.1.2 above, the method step of D2 in question for anticipating the claimed subject-matter is when going from a state where nearly all the laundry is adhered to the inner surface of the drum to the state where indeed all the laundry is adhered. This step is realised through the incremental increase in drum rotary speed as indicated in 'block 10' in Fig. 2 of D2. The 'desired process result' of this increase in drum rotary speed is thus evident before the increase is affected and the rotary speed is adjusted to the target rotary speed in order to achieve this, even if as indicated above, the adjustment does not necessarily yet reach the target rotary speed but simply adjusts towards it.

1.1.8 Regarding the respondent's contention that D2 failed to record a signal, this is also not accepted. From Fig. 2 and the description of the flow chart 'blocks' on page 6 of D2, it follows that $T_{ELEVATION}$ is calculated in 'Block 5' and is subsequently used in an evaluation in 'Block 7' such that $T_{ELEVATION}$ must, even if only temporarily, be recorded. Even an analogue discriminator, suggested by the respondent as a
possible device for comparing $T_{\text{ELEVATION}}$ with the maximum torque value, would require a temporary recording, in the broadest sense, of the $T_{\text{ELEVATION}}$ signal in order for the comparison to be made.

1.1.9 In summary it thus follows that all features of claim 1 are known from D2 such that the subject-matter of claim 1 lacks novelty (Article 54 EPC). The main request is thus not allowable.

2. Auxiliary request 4(new)

2.1 Whilst both the appellant and respondent had in writing requested remittal of the case to the first instance in the event that the main request were found not allowable, at oral proceedings both parties agreed that novelty be discussed before the Board, the request for remittal applying subsequently to the issue of inventive step.

2.2 Novelty

The subject-matter of claim 1 is not new contrary to the requirement of Article 54 EPC.

2.2.1 Relative to claim 1 of the main request, the subject-matter of the present claim 1 has two alternatives appended, one of which is that 'the laundry processing device is a tumble dryer'. Giving the claim the broadest reasonable interpretation, the claimed laundry processing device needs solely to be suitable for, or capable of, performing as a tumble dryer. It is noted that the method known from D2 is disclosed in the context of a laundry washing-dryer machine (see inter alia paragraph [0001]) which is understood by the skilled person as having a tumble dryer function. With
this knowledge and in the light of the finding regarding claim 1 of the main request above, D2 is therefore found to disclose all features of the present claim 1.

2.2.2 The respondent's argument that the description of the opposed patent distinguished between tumble dryers and washer-dryers does not however limit the interpretation of claim 1 to solely a tumble dryer with no washer or other function. In this regard it is noted that the patent neither indicates which features a 'tumble dryer' should possess nor does it indicate what should be understood by the term 'tumble dryer'. As is established EPO practice, a device is not normally distinguished solely by the name it is given; rather what the device is suitable for, or capable of, is how it is broadly to be understood. In the context of the present claim 1, therefore, the expression 'tumble dryer' is to be understood as a device suitable for, or capable of, tumble drying laundry.

2.2.3 Regarding the respondent's allegation that the term 'tumble dryer' is not a generic term which normally also encompasses washer-dryers, no indication or evidence has been presented to show that a 'tumble dryer' would be understood by the skilled person to be a laundry processing device which had exclusively a tumble dryer function (and no washing function). The Board thus sees no reason to diverge from the practice, indicated in point 2.2.2 above, that the term 'tumble dryer' should be broadly understood to be a device suitable for or capable of tumble drying laundry. D2 discloses just such a device suitable for tumble drying laundry as evident inter alia from paragraph [0001] and claim 1, which both define a washer-dryer machine as having a rotating drum i.e. in which the laundry is
tumbled during drying. The respondent also did not
dispute that the washer-dryer of D2 would tumble the
laundry during drying.

2.2.4 D2 thus discloses all features of claim 1 of auxiliary
request 4(new) such that the subject-matter of claim 1
lacks novelty (Article 54 EPC). Auxiliary request
4(new) is thus not allowable.

3. Auxiliary request 4a(new)

3.1 Novelty

The subject-matter of claim 1 is novel over the cited
prior art (Article 54 EPC).

3.1.1 D7 was the only prior art cited questioning in detail
the novelty of the subject-matter of claim 1. D7
however fails to disclose the following features of the
present claim 1:

- the drum being rotated about a substantially
  horizontal axis;
- the method being performed while the drum contains a
  level of washing fluid; and
- a target rotary speed of the drum being determined.

3.1.2 There is no explicit indication that the drum is
rotated about a substantially horizontal axis in D7,
nor is this to be implicitly derived from the
disclosure seen as a whole. The appellant's reference
to col. 4, lines 1 to 12 of D7 does not unambiguously
allow rotation of the drum about a horizontal axis to
be understood. While the laundry movement described
therein would indeed apply to a substantially
horizontal axis machine, the described movement would
be exactly the same in an inclined axis machine, with the lifters rotating to transport the laundry towards an upper position of the drum. In this situation it is thus not possible to unambiguously conclude that D7 discloses a laundry processing device with a substantially horizontal axis.

3.1.3 As regards the method of D7 not being performed with a level of washing fluid in the drum, it is noted that Figures 1a to 1c do not indicate a water level in the drum during rotation of the washing in the drum. Due to their schematic nature, these drawings cannot be used by themselves to determine that there is or is not water in the drum. However, col. 3, lines 5 to 10, disclose an alternative way of establishing a first and second lifter position which relies on current drawn by the drum drive motor. As described in point 1.1.4 above, the torque demanded of the motor (proportional to the current consumed by the motor) to rotate the lifter/laundry in the drum varies with relative rotational position of the lifter/laundry. It is this variation which is used in D7 to determine the position of the lifter. If a level of water were present in the drum, the complexity of this position determination would be significantly higher, if not made impossible, due to an unknown quantity of the water being picked-up by the lifter/laundry and a further unknown quantity of this draining from the lifter/laundry during the rotation of the drum, making the motor torque dependent on more than simply the rotation of the laundry. As a consequence, this passage of D7 indicates to the skilled person that a level of water is not present in the drum of D7 during performing of the method. Thus there is no disclosure of the drum containing a level of washing liquid.
3.1.4 As to the target rotary speed of the drum not being 'determined', D7 col. 3, lines 11 to 21 discusses predetermined drum rotation speed profiles which can be in the form of a sine-wave or which preferably follow the profile depicted in Fig. 2. The target rotary speed of the drum is thus not determined on the basis of the signal and a desired process result, rather the drum is subject to a preset speed profile which is synchronised with the lifters to provide the desired speed at every position of each lifter. The target rotary speed of the drum is thus never 'determined' in the sense of it being in response to particular inputs, rather it is preset and simply a synchronisation with the lifter position is carried out. The consequence is that each position of the lifter has a predetermined speed, this being dictated by the preset speed profile.

3.1.5 The appellant's argument that the patent itself did not require a rotary speed be calculated, it sufficing to simply choose an appropriate speed from the recorded signals, does not change the Board's finding. It is accepted that the patent does not calculate a rotary speed, the determining of the target rotary speed relating to a selection of an appropriate speed from amongst those previously run and from which a signal correlated to the interaction between the drum and the laundry was recorded. Nonetheless, the decision as to which rotary speed to choose can reasonably be denoted as 'determining' a target rotary speed since single speeds will be specifically related to the measured signals. Conversely, in D7, no selection of a rotary speed at all is carried out, these being preset in the speed profile (an example being that depicted in Fig. 2) and the 'decision' process for the method being simply to synchronise the speed profile with the
particular position of a lifter.

3.1.6 The appellant's further argument that the controller in D7 had to coordinate the preset speed profile with the lifter position, this corresponding to a step of 'determining a target rotary speed of the drum', is not accepted. It is noted once again that the method disclosed in D7 simply synchronises a preset drum speed profile with particular positions of a lifter, rather than actually 'determining' a target rotary speed. To further illustrate this difference, absent the preset speed profile in D7, there would be absolutely no guidance available as to how the drum should be driven, simply the first and second positions of a lifter being determined. The synchronising of the preset speed profile with the first and second lifter positions lacks any 'determining' of a target rotary speed of the drum, this being predetermined already in the speed profile and having simply to be applied to the drum rotation in appropriate synchronicity with the lifter positions. That the synchronisation may have to be repeated at every passage of each lifter past its first and second positions also changes nothing as regards the method of D7 failing to disclose a step of 'determining a target rotary speed of the drum'.

3.1.7 In summary, therefore, the subject-matter of claim 1 is novel over D7.

3.1.8 Despite having presented novelty arguments against the subject-matter of claim 1 on the basis of D8 in its letter of 8 March 2016, at oral proceedings the appellant indicated that it no longer wished to rely on D8. The Board thus sees no reason to consider D8 any further.
3.1.9 As regards the subject-matter of independent claim 5, the parties submitted no alternative arguments on novelty to those already presented with respect to claim 1.

3.1.10 The appellant raised no further objections to the novelty of the subject-matter of claim 1 or claim 5 of the present request. The Board thus concludes that the subject-matter of claims 1 and 5 is novel (Article 54 EPC).

3.2 Remittal according to Article 111(1) EPC

3.2.1 Relative to the independent claims decided upon by the opposition division in its decision, significant changes have been made to the present claims.

3.2.2 According to Article 111(1) EPC, when deciding on an appeal, the Board may either exercise any power within the competence of the department which was responsible for the decision appealed or remit the case to that department for further prosecution.

3.2.3 In the present case, if the Board itself carried out the examination of inventive step, the parties would not have sufficient opportunity to fully develop their arguments with respect to the subject-matter of claims 1 and 5 of auxiliary request 4a(new). With remittal having been requested by both the appellant and the respondent, the Board avails itself of its power under Article 111(1) EPC to remit the case back to the department of first instance for further prosecution.
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 for further prosecution.

The Registrar: 

The Chairman:

M. H. A. Patin

M. Harrison

Decision electronically authenticated