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Datasheet for the decision of 17 December 2018

Case Number: T 1951/14 - 3.2.04

Application Number: 07754583.8

Publication Number: 2001344

IPC: A47J31/00, A47J31/34, A47J31/44, A47J31/54

Language of the proceedings: EN

Title of invention:
BEVERAGE MAKER

Patent Proprietor:
Driessen Aircraft Interior Systems, Inc.

Opponent:
NESTEC S.A.

Headword:

Relevant legal provisions:
EPC Art. 56, 123(2)
RPBA Art. 13(3)

Keyword:
Inventive step - (no)
Amendments - allowable (no)
Late-filed auxiliary requests - admitted (no)

Decisions cited:

Catchword:

Europäisches Patentamt
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Beschwerdekammern

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Case Number: T 1951/14 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 17 December 2018

Appellant: (Patent Proprietor)	Driessen Aircraft Interior Systems, Inc. 10781 Forbes Avenue Garden Grove CA 92843 (US)
Representative:	Phillips & Leigh LLP Temple Chambers 3-7 Temple Avenue London EC4Y 0DA (GB)
Respondent: (Opponent)	NESTEC S.A. Avenue Nestlé 55 1800 Vevey (CH)
Representative:	Rupp, Christian Mitscherlich PartmbB Patent- und Rechtsanwälte Postfach 33 06 09 80066 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 30 June 2014 revoking European patent No. 2001344 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	W. Van der Eijk
Members:	G. Martin Gonzalez
	S. Oechsner de Coninck

Summary of Facts and Submissions

I. The appellant (proprietor of the patent) lodged an appeal, received on 27 August 2014, against the decision of the opposition division of the European Patent Office posted on 30 June 2014 revoking European patent No. 2 001 344 pursuant to Article 101(3)(b) EPC, and simultaneously paid the appeal fee. The statement setting out the grounds of appeal was received on 31 October 2014.

II. Opposition was filed against the patent as a whole under Article 100(a) EPC based on lack of novelty and inventive step, and under Article 100(c) based on unallowable extension of subject-matter.

The opposition division revoked the patent having regard to, *inter alia*, to the following documents:

(D2) WO 2006/063645 A1
(D3) WO 2006/029763 A2

III. The appellant-proprietor requests that the decision under appeal be set aside and the patent be maintained on the basis of a main or a auxiliary request 1 filed with the grounds of appeal, or alternatively on the basis of auxiliary requests 2 or 3 filed with letter of 20 January 2016 or one of the auxiliary requests 1a and 3a filed with letter of 16 November 2018.

The respondent-opponent requests that the appeal be dismissed.

IV. Oral proceedings were duly held on 17 December 2018.

V. Independent claim 1 according to the relevant requests reads as follows:

(a) Main request

"A beverage maker (10) comprising:

I) an in-line heating assembly (12) that defines a flow path (14) for heating a liquid to make hot beverages, the flow path having a first end (22) and a second end (26);

II) at least one valve (20, 24) for regulating the flow of the liquid along the flow path;

III) a control system (102) configured to provide a control signal to the at least one valve; and,

characterised in that:
the beverage maker (10) further comprises:

IV) an optical sensor assembly (80) configured to send signals to the control system; wherein the optical sensor assembly and control system are configured to detect at least one level of liquid located within a serving container (144) placed within the beverage maker; and wherein the control system evaluates the signals sent by the optical sensor assembly to determine whether an appropriate liquid level in the serving container has been reached: wherein;

V) the optical sensor assembly (80) comprises: at least one light source (82); and at least one detector (86) spaced apart from the at least one light source; where in use:

a) the at least one visible light source (82) is positioned above the serving container (144) and operative to emit light onto the upper surface of the liquid located within the container;

b) the at least one detector (86) is positioned above the serving container;

c) the at least one detector and light source are oriented such that the detector is operative to receive a peak level of light reflected from the surface of the liquid, once the liquid within the serving container achieves a prescribed level within the serving container."

(b) Auxiliary request 1

Claim 1 reads as in the main request, with the following features added at the end of the claim:

"...the beverage maker (10) further comprises:

VI) a server locked sensor (114) operative to sense whether the serving container is locked in place

VII) the control system (102) comprises a controller (108) configured to receive input from the server locked sensor (114), and the optical sensor assembly (80) and to regulate operation of the beverage maker (10), based in part on input received from the sensors, and configured to ensure that in use:

a) prior to the start of brewing, the control system will determine whether the serving

container is full and whether the serving container is locked in place; and

b) if the serving container is not full and is locked in place, brewing will be initiated."

(c) Auxiliary request 1A

Claim 1 reads as in the main request, with the following features added at the end of the claim:

"... the beverage maker (10) further comprises:

VI) a housing (52) that defines a recess (54) for receiving the serving container (144) such that when stowed in the recess (54), the serving container (144) is positioned below a filter tray (56) that is used to hold coffee grounds within a filter,

VII) a retainer bracket (58) positioned on a side wall (60) of the housing (52) the retainer bracket (58) being operatively connected to a lock button (62) positioned adjacent to the filter tray (56)

VIII) a server locked sensor (114) operatively coupled to the retainer bracket (58) and operative to sense whether the serving container is locked in place

IX) at least one temperature sensor (118, 120) configured to produce a temperature signal indicative of the temperature at a prescribed location within the heating body (18)

and wherein:

the control system (102) comprises a controller (108) configured to receive input from the server locked sensor (114), the optical sensor assembly (80), and the at least one temperature sensor (118,120) and to regulate operation of the beverage maker (10), based in part on input received from the sensors, and configured to ensure that in use:

a) prior to the start of brewing, the control system will determine whether the serving container is full and whether the serving container is locked in place; and

b) if the serving container is not full and is locked in place, brewing will be initiated

and configured to receive the temperature signals from the at least one temperature sensor and to regulate the plurality of heaters (16)."

(d) Auxiliary request 2

Claim 1 reads as in the main request, with the following features added at the end of the claim:

"...

VI) a drainage assembly (70) located downstream of the in-line heating assembly (12), the drainage assembly comprising a connector port (72) configured to connect to an airplane wastewater system, and a drainage port (74) configured to drain liquids into a drainage sump."

(e) Auxiliary request 3

Claim 1 reads as in the first auxiliary request, with the additional features of the second auxiliary request added at the end of the claim as follows:

"...

VIII) a drainage assembly (70) located downstream of the in-line heating assembly (12), the drainage assembly comprising a connector port (72) configured to connect to an airplane wastewater system, and a drainage port (74) configured to drain liquids into a drainage sump."

(f) Auxiliary request 3A

Claim 1 reads as in the auxiliary request 1A, with the additional features of the second auxiliary request added at the end of the claim as follows:

"...

X) a drainage assembly (70) located downstream of the in-line heating assembly (12), the drainage assembly comprising a connector port (72) configured to connect to an airplane wastewater system, and a drainage port (74) configured to drain liquids into a drainage sump."

VI. The appellant-proprietor argues as follows:

Late filing of auxiliary requests 1A and 3A is justified and they are admissible. None of the amendments to the requests contain extended subject-matter. The subject-matter of claim 1 of all the requests is new and involves an inventive step in the light of the cited prior art.

VII. The respondent-opponent argues as follows:

The subject-matter of claim 1 of the main request and auxiliary request 2 does not involve an inventive step in respect of documents D2 and D3. The amendments in claim 1 of auxiliary requests 1 and 3 add subject-matter not originally disclosed. Late-filed auxiliary requests 1A and 3A are not admissible.

Reasons for the Decision

1. The appeal is admissible.

2. Background

The invention is concerned with beverage makers such as coffee or tea brewers. The disclosure is mainly directed to such devices particularly configured for use in transport vehicles such as airplanes.

The main request encompasses two different aspects as follows.
(1) An in-line heating assembly for heating incoming water as it travels along a flow path that runs past a plurality of heaters, so alleviating the need for a bulkier batch heater such as those including a water tank or a vessel, see paragraph [0008] of the patent specification. The assembly also comprises a valve for regulating the flow of the liquid along the flow path Flow rate can be so adjusted to ensure the desired water temperature, see specification paragraphs [0050], [0052].
(2) An optical sensor assembly above the serving container with a light source and a light detector to

detect light reflecting from the liquid surface, arranged to determine when the container has reached a prescribed fill level of brewed coffee or tea in it, to optimise control of fill, see specification paragraph [0012].

3. Main request - inventive step

The respondent-opponent raises an objection of lack of inventive step in view of the teachings of D2 and D3 as prior art documents according to Article 54(2) EPC. Although document D2 was published after the claimed priority date of the contested patent, the appellant-proprietor, as expressly confirmed during the oral proceedings (see minutes), does not challenge the finding of the opposition division that priority for the contested patent is invalidly claimed, see pages 6 and 7 of the impugned decision. The board also does not see any reason to reverse this finding of the opposition division. The board thus considers document D2 as belonging to the state of the art within the meaning of Article 54(2) EPC.

3.1 In the board's opinion, as explained in the sections below, the subject-matter of claim 1 of the main request does not involve an inventive step starting from D3 in combination with the teaching of D2. In this context, two main points under dispute were whether D3 teaches all the features of the in-line heating arrangement and D2 teaches those of the optical sensor assembly required by claim 1. These issues are also analysed in detail in the following discussion of inventive step.

3.2 Closest prior art D3

The respondent-opponent submits that D3 is a suitable starting point for the assessment of inventive step. Indeed, document D3 describes a beverage maker 2, see page 1, lines 1-2, with all the features of the preamble of claim 1; in particular an in-line heating assembly 1, see embodiment of Figure 5, that defines a flow path with an inlet or first end 10 and an outlet or second end 20 with heaters 14e-14f along the flow path and a control system 18 that provides a control signal to valve 50a at the outlet of the flow path to close outlet valve 50a and open the alternative outlet valve 24a, see Figure 5. The only feature that has been disputed by the appellant-proprietor in the context of the analysis of the heating arrangement of this document is whether valves 50a and 24a of D3 anticipate the claimed feature: *at least one valve for regulating the flow of the liquid along the flow path.*

3.2.1 This issue hinges on the interpretation of the disputed feature of the claim, in particular on the scope of the feature. In this respect, the board accords with the respondent-opponent, who submits that the skilled person would read the claimed feature in a broad sense, since the feature *regulating the flow along the flow path* is not further specified by the claim. Accordingly, any input or output valve or group of valves that, following a control signal, can adjust the flow along the flow path would anticipate the claimed feature, however simple that adjustment may be, e.g. merely switching between two different flow values. This interpretation is, in the board's opinion, not only clearly supported for the skilled reader by the claim wording itself, it is also what the skilled person would understand in a contextual reading of the

claim. Indeed, the embodiment of Figure 18 of the contested patent confirms this interpretation. The disputed feature is embodied here by two valves, namely a standard valve 136 and a restricted flow valve 138 that only switch between two flow rates (regular and restricted) through the heating assembly, see specification paragraph [0050].

3.2.2 Against this background, the skilled person would, in the board's view, find that D3 anticipates the disputed feature "*at least one valve for regulating the flow of the liquid along the flow path*" by disclosing a "regular" flow valve 50a and a restricted flow valve 24a that adjust the flow along the flow path. In detail, valve 50a is connected to the drainage tank and is left open during the warming-up phase of the heating assembly 1, allowing flow of water at lower pressure (so that back-pressure valve 24a remains automatically closed). Once the target temperature is reached, the solenoid valve 50a is commanded to close, causing an increase of pressure upstream of the valve 50a and, due to the higher pressure, the subsequent opening of the back-pressure valve 24a at the other outlet of the circuit. The water is then allowed to flow through the more restricted outlet branch 24/24a, obtaining higher pressure for coffee extraction, see page 17 of D3. Thus, the valves 50a, 24a also switch between a "regular" (drainage) flow and a restricted (higher pressure) flow and thereby regulate the flow, as required by the disputed feature.

3.2.3 The appellant-proprietor argues unconvincingly that the valves of D3 do not regulate the flow along the flow path of the heating assembly. They base their argument on the fact that the known valves are located at the outlet of, i.e. downstream of, the heating assembly 1.

This argument cannot accepted because opening, closing or restricting the flow at the outlet of a flow path also correspondingly regulates the upstream flow along that flow path.

3.2.4 The appellant-proprietor further seeks to establish a difference between the claimed arrangement and the valves of D3 in that the known machine of D3 also has a pump 8 for creating the flow. However, the contested claim 1 is not limited in any manner to arrangements without pumps. It is not specified in claim 1 whether pressure in the circuit is produced by a pump within the machine or by the pressure of the incoming water of the feeding system to which the machine is connected. Therefore, in the board's view, the known arrangement with a pump 8 for creating the flow also falls, in this respect, under the scope of the contested claim.

3.3 Difference and problem to be solved

In sum, the claimed beverage maker differs from the known machine of D3 only in the optical assembly, as claimed in the characterising portion of the contested claim.

The optical sensor assembly above the serving container of the claimed beverage maker has a light source and a light detector to detect light reflecting from the liquid surface, arranged to determine when the container has reached a prescribed fill level of brewed coffee or tea in it. An optimised control of fill can be so obtained, see specification paragraph [0012]. The corresponding technical problem can therefore be formulated as the provision of a machine of the known type with an improved fill control.

3.4 Solution

It is undisputed that document D2 teaches the use of an optical sensor assembly to be used in known machines of the type of D3 for improving control of the fill of the receptacle, see D2, page 3, lines 30-36. Prompted by this indication in D2, the skilled person tasked with the above problem of improving the fill control of D3 would, as a matter of obviousness, use the optical sensor assembly taught by D2 in order to solve that problem.

3.5 It remains to be decided whether the solution taught by D2, i.e. the optical sensor assembly, teaches all the features of the optical sensor assembly required by claim 1, so that the combination with D2 would actually lead the skilled person to the subject-matter of claim 1.

In this respect, the opposition division held that D2 anticipates an optical sensor assembly as claimed by the contested patent, see page 8 of the impugned decision. According to the opposition division, D2 describes a light detector 65 (the "adjacent" photodiode) of the row of photodiodes 23 that is oriented (see page 15, lines 34-39) with respect to the emitted light ray such that it receives a maximum level of light once the liquid in the serving container achieves a prescribed level (see page 19, lines 15-20). The board agrees with the analysis that document D2 teaches all the differentiating features of the contested claims and that the combination with D3 anticipates the subject-matter of the claim.

3.5.1 The appellant-opponent contends that the claimed optical sensor assembly is different from the one in

D2. They submit, in particular, that the claimed feature "a peak level" is restricted to the peak level resulting only from direct reflection of the light. In contrast, the peak or maximum of D2 is produced by a diffuse reflection of the light. However, contrary to the submissions of the appellant-opponent, it is not derivable from the claim wording that the detected peak level must be produced by direct reflection only, as the claim itself is silent about direct or diffuse light reflection. Thus, the detection of a peak or maximum produced by diffuse reflection of the light, as is the case in D2, seems to be also included in the scope of the contested claim. This is confirmed by the accompanying specification, which is also silent ,as acknowledged by the appellant-proprietor during the oral proceedings, in respect of whether only direct reflection is intended or in respect of constructional details that may directly and immediately imply such direct reflection only.

3.5.2 In a further argument, the appellant-opponent submits that a "maximum" level as recited on page 19, lines 15-20 of D2, is not the same as a "peak" level, which is the feature needed to satisfy the contested claim. However, the board considers, contrary to the argument of the appellant-opponent, that a maximum intensity as described on page 19 of D2 and a peak level as required by the contested claim are synonymous in this context, as is also apparent from D2 itself, which explicitly describes the maximum as "*a peak* of intensity" on page 17, lines 26-27.

3.5.3 Thus, the board concludes that D2 teaches all the features of the optical sensor assembly as required by claim 1, so that the above-explained obvious combination of D3 with the teachings of D2 would lead

the skilled person to subject-matter falling under the scope of claim 1.

3.6 In conclusion, for the above reasons, the board holds that the subject-matter of claim 1 according to the main request does not involve an inventive step within the meaning of Article 56 EPC in the light of the teachings of D3 and D2.

4. Auxiliary requests 1 and 3 - amendments

The first and third auxiliary requests incorporate a server locked sensor (14), which implies that the machine also has an associated server locking system to lock the serving container in place. However, no particular locking system is specified in the claim. The above added feature is taken from the description of a particular embodiment, specifically from the specification paragraph [0024]. In the board's opinion, this represents an unallowable intermediate generalisation, in so far as the server locked sensor is originally described only in close functional and structural relationship to the retainer bracket and system, as also submitted by the respondent-opponent in the reply dated 11 March 2015 to the statement of grounds. Indeed, according to the cited paragraph of the specification, the server locked sensor is a part of the retainer bracket and is "operatively connected" to it for controlling its operation. There is no indication or suggestion in that passage or elsewhere in the original documents that a server locked sensor per se is contemplated for working with any other type of locking system. The skilled reader would thus only derive from the original disclosure that a bracket as a functional sub-unit of the machine is described, which bracket in turn comprises a sensor as an inseparable

functionally and structurally linked part of this sub-unit. Therefore, the omission of the retainer bracket with all its features in this context results in an unallowable extension of subject-matter, in so far as embodiments, now falling under the amended claim, encompass server locking devices other than the retainer bracket positioned on a side wall of the housing as described in paragraph [0024].

The board thus concludes that the amendment to claim 1 of auxiliary requests 1 and 3 adds subject-matter over the contents of the originally filed application, contrary to Article 123(2) EPC.

5. Auxiliary requests 1A and 3A - admissibility.

The appellant-proprietor filed with its letter dated 16 November 2018, approximately one month before the oral proceedings and after oral proceedings had been arranged, new requests 1A and 3A. Thus, the admission of such requests is at the discretion of the board, Article 13(3) RPBA.

In this regard, a main question to answer is the justification for their late filing of these documents. Additionally, Article 13(3) RPBA specifically directs the attention to the question whether the opposing party can reasonably be expected to deal with the issues raised by an amendment in the scheduled oral proceedings.

5.1 With respect to justification, no clear justification appears to exist for the late filing. The originating objection of unallowable extension of subject-matter had already been raised by the respondent-opponent in the reply dated 11 March 2015 to the statement of

grounds. The appellant-opponent could thus have submitted these requests with their later submissions of 20 January 2016, together with auxiliary requests 2 and 3, which were also submitted on that date. The preliminary opinion of the board of 11 October 2018 cannot be considered in the present case as a new or unexpected development that may justify the late filing, as it does not raise new issues or objections in this respect.

5.2 In the context of Article 13(3) RPBA, as explained in IV.E.4.4.8.b) of the Case Law of the Boards of Appeal, 8th edition 2016 (CLBA), requests filed after the scheduling of oral proceedings to claims with added features derived solely from the description, as in the present case, raise the question of whether such features were included in the original search, or whether an additional search is necessary. If an additional search is needed at such a late stage that either the oral proceedings must be adjourned or the case remitted to the department of first instance, Article 13(3) RPBA is against the admissibility of such requests. Auxiliary requests 1A and 3A include new features referring to a recess of the housing, a filter tray, constructional details of the retainer bracket and a temperature sensor, including its interaction with the control system, all derived solely from the description. It cannot be automatically assumed that they were considered in the original search. It thus appears that an additional search would be needed to properly assess the patentability of the new claims.

5.3 In consideration of the above, the board has decided not to admit auxiliary requests 1A and 3A into the proceedings.

6. Auxiliary request 2 - inventive step

With regard to claim 1 of the main request, auxiliary request 2 includes the additional feature of a drainage assembly located downstream of the in-line heating assembly, the drainage assembly comprising a connector port configured to connect to an airplane wastewater system, and a drainage port configured to drain liquids into a drainage sump.

6.1 It is undisputed that D3 can be considered as a suitable starting point for the assessment of inventive step. Further to the above-identified common features of D3 and the contested claim in section 3.2 above, D3 (embodiment of Figure 5) further states that the drainage assembly located downstream of the in-line heating assembly 1 comprises a drainage port configured to drain liquids into a drainage sump 52, see D3, page 16, lines 29-35. Thus, the subject-matter of the new independent claim differs from D3 in the optical sensor assembly, as also identified in section 3.3 above, and in that the drainage assembly comprises an additional connector port configured to connect to an airplane.

6.2 The optical sensor assembly above the serving container of the claimed beverage maker serves to obtain an optimised control of fill, see specification paragraph [0012] and section 3.3 above. The corresponding technical problem for these features can therefore be formulated as the provision of a machine of the known type with an improved fill control.

With a drainage assembly having two connectors, one for an airplane wastewater system and one for draining into a drainage sump, the beverage maker is adapted for use in galleys of different particular configurations, see

paragraph [0037] of the patent specification. The associated technical problem can thus be formulated as how to adapt the known beverage maker for use in existing airplanes.

It is undisputed that the above two technical problems underlying the two different groups of features are technically unrelated, as they do not show any functional relationship. Therefore, for the assessment of inventive step, the relevant question is whether each group of features, seen in isolation, is obviously derivable from the prior art, see in this respect CLBA, I.D.9.2.2.

6.3 As already explained in section 3.4, the use of an optical sensor assembly, with the features as in present claim 1, in the machine of D3 is an obvious measure in the light of the teachings of D2.

6.4 It thus remains to be decided whether the provision of the drainage assembly, as claimed, is obvious from the prior art. Document D3, as closest prior art, teaches a drainage assembly comprising a port for draining liquids into a drainage sump 52. The question that arises is therefore, whether the skilled person in light of the teachings in other prior art or in their common general knowledge, would have modified, as a matter of obviousness, the beverage maker of D3 to include the claimed further connector when tasked with the problem of how to adapt the known beverage maker to existing airplanes.

It was not under dispute that the relevant skilled person for the present case is to be considered an engineer involved in the design and development of beverage makers and therefore also familiar with

solving standard fitting and installation problems. The board is convinced that, when tasked with the adaptation of the machine to existing airplanes, such a skilled person would immediately identify that the existing airplane wastewater systems are generally provided with either a connection port or a drainage sump, as also described in paragraph [0037] of the contested patent. Such a skilled person would also be, in this respect, familiar with the problems associated with adapting machines for use in existing environments with two different connection standards. The skilled person would immediately consider providing the machines with two different standard connectors corresponding to the two different known standards as a straightforward option. Realising this option would accordingly fall within the skilled person's common technical knowledge and resources. In this context, the board notes that the contested claim merely requires connectivity to an airplane wastewater system connector, without further limitation as to whether the connector is of any non-standard kind. Consequently, the board concludes that, when tasked with adapting the drainage assembly of D3 for use in the existing airplanes environment, the skilled person would regard the addition of a further connector port configured for the other type of existing airplane wastewater connection as an obvious modification to the known drainage assembly.

The board is also not convinced by the appellant-proprietor's submission that adapting the machine of D3 for use in airplanes is not a natural development for that machine, as it is a vending machine. The board notes that, contrary to this submission, the beverage maker of D3 is not restricted to the particular use put forward by the appellant-proprietor. It is described,

in particular, on page 10, lines 21-24 of that document that the beverage maker is intended indifferently for household or industrial use. The skilled person would immediately infer from this description, of such generic terms, that the device of D3 is not restricted to any particular field of application.

6.5 The board therefore concludes that neither group of features involves an inventive step and that, consequently, the subject-matter of claim 1 according to the second auxiliary request does not fulfil the requirements of Article 56 EPC.

7. In summary, all the requests submitted by the appellant-proprietor fail. The board consequently confirms the decision of the opposition division.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar: The Chairman:

G. Magouliotis W. Van der Eijk

Decision electronically authenticated