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Language of the proceedings: EN

Title of invention:
Device for controlling the actuating shaft of means for recirculating a cooling fluid in vehicle engines

Patent Proprietor:
Baruffaldi S.p.A.

Opponent:
PIERBURG GMBH

Headword:

Relevant legal provisions:
EPC 1973 Art. 54, 56
RPBA Art. 13(1)

Keyword:
Inventive step - (yes)
Late-filed argument - admitted (no)

Decisions cited:
T 0121/89, T 0544/89

Catchword:

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Case Number: T 0071/11 - 3.2.06

D E C I S I O N
of Technical Board of Appeal 3.2.06
of 18 September 2014

Appellant: (Opponent)	PIERBURG GMBH Alfred-Pierburg-Str. 1 D-41460 Neuss (DE)
Representative:	Eberlein, Jasper Ter Smitten Eberlein Rütten Patentanwälte Partnerschaftsgesellschaft Burgunderstrasse 29 40549 Düsseldorf (DE)
Respondent: (Patent Proprietor)	Baruffaldi S.p.A. Via Cassino d'Alberi, 16 20067 Tribiano (MI) (IT)
Representative:	Raimondi, Margherita Dott. Ing. Prof. Alfredo Raimondi S.r.l., Piazzale Cadorna, 15 20123 Milano (IT)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 9 December 2010 rejecting the opposition filed against European patent No. 1353051 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	M. Harrison
Members:	M. Hannam
	W. Ungler

Summary of Facts and Submissions

I. An appeal was filed by the appellant (opponent) against the decision of the opposition division to reject the opposition against European patent No. 1 353 051. It requested that the decision be set aside and the patent be revoked. In support of its request it cited:

D1 DE-A-42 07 709, and
D10 DE-A-100 13 252.

II. In its letter of response, the respondent (patentee) requested that the appeal be dismissed.

III. The Board issued a summons to oral proceedings including a communication containing its provisional opinion, in which it indicated *inter alia* that, in addition to a discussion of what was to be understood by the term 'stepped bearing', the presence of an inventive step in view of D1 and D10 would also be a matter for discussion.

IV. With letter of 18 August 2014 the appellant raised an objection to novelty of the subject-matter of claim 1 for the first time, specifically with respect to D10.

V. Oral proceedings were held before the Board on 18 September 2014, during which the appellant requested that the decision under appeal be set aside and that the European patent No. 1 353 051 be revoked. The respondent requested that the appeal be dismissed.

VI. Claims 1 and 25 of the main request read as follows:
"1. Device for controlling the means (1) for recirculating a cooling fluid in engines (11a) in particular for vehicles and like, comprising a shaft

(2) actuating an impeller (1), means (3,3b) for generating the movement of said shaft and means for transmitting the movement from the said generating means (3,3b) to the said shaft (2) of the impeller (1), said movement transmission means comprising a double-action coupling (30,40) comprising:
- magnetic means (31) integral with a rotor (30;130,230) and able to co-operate with corresponding magnetizable means (41;141;241) of a support (40;140;240) rotationally connected to the shaft (2) of the recirculating means and movable in an axial direction with respect thereto, so as to determine a first speed of rotation of the recirculating means (1), and;
- electromagnetic means (22,22a) able to cooperate with a ring (41a;141a;241a) integral with said support (40;140;240) so as to determine a second and different speed of rotation of the impeller (1) characterized in that it further comprises a stepped bearing (20) including an inner race (20b) carrying the shaft (2), an outer race (20c) carrying the movement generating means and a middle fixed race (20a) to which said electromagnetic means (22;22a) are integral."

"25. Pump for recirculating a fluid for cooling engines in particular for vehicles and the like, comprising an impeller (1), the actuating shaft (2) of which is connected to means (3,3b) for generating the movement of said shaft by means of associated movement transmission means, said movement transmission means comprising a double-action coupling comprising:
- magnetic means (31) integral with a rotor (30;130;230) and able to co-operate with corresponding magnetizable means (41;141;241) of a support (40;140;240) rotationally connected to the shaft (2) of the recirculating means and movable in an axial

direction with respect thereto, so as to determine a first speed of rotation of the recirculating means (1), and;
- electromagnetic means (22,22a) able to co-operate with a ring (41a;141a;241a) integral with said support (40;140;240) so as to determine a second and different speed of rotation of the pump impeller (1)
characterized in that it further comprises a stepped bearing (20) including an inner race (20b) carrying the shaft (2), an outer race (20c) carrying the movement generating means and a middle fixed race (20a) to which said electromagnetic means (22;22a) are integral."

VII. The appellant's arguments may be summarised as follows:

The expression 'a stepped bearing' was not a technically recognised bearing designation. When considering the drawings and the description, this concerned simply a bearing arrangement where the outer diameter of the inner bearing was smaller than the inner diameter of the outer bearing to provide a stepped radial dimension. The claimed bearing was defined as including an inner race, an outer race and a middle race, but this did not exclude the middle race comprising multiple parts, only one of which was claimed; for example a radially outer part in contact with the rolling elements of the outer bearing or a radially inner part in contact with the elements of the inner bearing. As such, two bearings arranged such that one bearing was located concentrically within the other met the definition of a stepped bearing as understood from claim 1.

The skilled person would understand a bearing race to be the single surface of the outer or inner ring on which the bearing elements ran. Thus claim 1 could be

interpreted as simply claiming one of the two surfaces present in the position of the middle race.

Since connecting means between races were not claimed, a possible interpretation of claim 1 was a bearing arrangement or assembly in which two bearings were joined together, for example by a housing member. This was further supported by an advantage of the invention cited in para. [0025] being that the stepped bearing allowed the bearing radial dimension to be kept very small; this was equally achievable by the two bearing solution.

As found in T121/89 and T544/89, the description and figures of the patent were not to be relied upon to clarify the wording of claim 1, rather the wording of the claim alone defined the subject-matter claimed.

A bearing 'unit', if claimed, would be a bearing installed as a single piece, rather than in multiple parts; such a bearing unit was however not claimed.

The subject-matter of claim 1 lacked novelty in view of D10 as this document implicitly disclosed practically all features of claim 1. Particularly the radially aligned bearing arrangement was the same as the claimed stepped bearing.

Even if novelty were acknowledged, the subject-matter of claim 1 anyway lacked an inventive step starting from D1. D1 failed to disclose the stepped bearing of claim 1, yet D10 disclosed two bearings 26 and 30 which were radially aligned and together formed a stepped bearing. In D10, the outer ring of the inner bearing 26 and the inner ring of the outer bearing 30 were both fixed to the housing 12, thus forming the claimed

middle fixed race.

The subject-matter of claim 1 further lacked an inventive step starting from D10. With D10 lacking the stepped bearing of claim 1, this was to be seen as an obvious modification for the skilled person in view of D1, when wishing to solve the objective technical problem of providing an alternative, simpler bearing arrangement.

The above arguments applied equally to claim 25 for the same reasons as applied to claim 1.

VIII. The respondent's arguments may be summarised as follows:

The stepped bearing of claim 1 was to be interpreted as a single bearing comprising three races, not as two bearings each with two races. Claim 1 defined a bearing, not a bearing arrangement or a bearing assembly.

The objection to novelty of the subject-matter of claim 1 was not to be admitted, since it was a change of the appellant's case and was *prima facie* not relevant.

A stepped bearing was absent from both D1 and D10. Whichever document was considered as representing the closest prior art for the assessment of inventive step, this claimed feature would always be missing when combined with the teaching of the other document, such that an inventive step in the subject-matter of claim 1 was necessarily present.

Reasons for the Decision

1. Terminology 'stepped bearing'

1.1 The characterising portion of claim 1 includes the features: '... a stepped bearing including an inner race carrying the shaft, an outer race carrying the movement generating means and a middle fixed race ...'. From the above wording alone it is clear that a single item is being claimed, namely a bearing, rather than a plurality of bearings in some way construed to make up a stepped structure. Such a plural bearing structure might perhaps be referred to as a bearing arrangement or a bearing assembly providing a stepped configuration, but this is distinct from the terminology 'a stepped bearing'. The feature 'a stepped bearing' in the manner defined in claim 1 is therefore to be understood as a component with its own structural integrity comprising (at least) three structurally connected races.

1.2 The appellant's argument that only one of the two elements making up the middle race was included in the claim, such that a two bearing arrangement also read onto the claim, is unconvincing. Such an arrangement would not be included in the claimed expression 'a stepped bearing' since it would not be a bearing, i.e. a single component, as claimed, but rather two bearings. While a two bearing arrangement as purported by the appellant may indeed have a somewhat similar bearing function to the claimed stepped bearing, this in no way lessens the limitation imposed by the wording 'a stepped bearing' in the claim, which limits the scope of the claim to a bearing which is a component with its own structural integrity as explained above. It is also noted that the appellant's comparative two bearing arrangement, with a function similar to a

stepped bearing, would necessarily comprise two separate, individual bearings which, when not installed in the claimed device, would consist of these two bearings which are not structurally integral with each other. Also in this respect, such a bearing arrangement does not fall within the scope of the feature 'a stepped bearing'.

The appellant's further argument that a bearing race was to be understood as a single surface on which the bearing elements ran and that two separate surfaces, or races, were possible in the position of the middle race, also falls foul of a stepped bearing necessarily being one structurally integral component. In as far as the appellant's argument can be understood, such an arrangement would require two concentrically arranged bearings, one located within the inner race of the other, in which the middle race would consist of the inner race of the outer bearing and the outer race of the inner bearing. Such a two bearing arrangement, however, cannot be considered 'a stepped bearing' as defined in claim 1 for the reasons already given. The appellant's related argument that two concentrically arranged bearings would also achieve the cited advantage of reducing the bearing radial dimension is not relevant. Regardless of such an arrangement allowing radial dimension reduction (although arguably not as much as a stepped bearing, as claimed, which for comparison purposes would then have a single middle race), such a two bearing arrangement does not fall under the definition of 'a stepped bearing'.

1.3 The appellant's contention that a bearing arrangement in which two bearings were joined together via an external element, such as a housing element protruding between the bearings, would also fall within the scope

of the claim, is not persuasive. Even though such a bearing arrangement might have a somewhat similar function to a stepped bearing as defined in claim 1, it is nonetheless a bearing arrangement comprising two separate bearing components, rather than one structurally integral component.

1.4 The Board does not accept the appellant's argument that a stepped bearing comprising just a single component would have been described in the claim as a 'bearing unit' had this been meant. A singular component providing the stepped bearing with all of its races is already defined in the claim due to the use of the grammatical singular, namely 'a' in the terminology 'a stepped bearing'.

1.5 The Board concurs with the appellant insofar as it is the wording of the claims, rather than the description or figures, which defines the scope of the invention and thus the interpretation of the subject-matter of the claims (see also T121/89, Reasons 2 and T544/89, Reasons 3.1). Nonetheless, in the present case, although not decisive for the meaning of the terminology 'a stepped bearing', it may be noted that the description and figures of the patent do confirm the interpretation which is attributed by the Board to the feature 'a stepped bearing' in claim 1; particularly para. [0009] of the patent states that 'The pump body 11 has, integral therewith, a seal .... and the middle race 20a of a stepped bearing 20', and Fig. 1 shows the middle race 20a as a single component rather than an amalgamation of 2 races from separate bearings or the like.

1.6 The expression 'a stepped bearing' in claim 1 is to be interpreted as a (i.e. single) component with its own

structural integrity comprising (at least) three structurally connected races.

2. Claim 1

2.1 Objection of lack of novelty

2.1.1 The Board exercised its discretion under Article 13(1) RPBA not to admit the appellant's objection concerning novelty (Article 54 EPC 1973) into the proceedings.

2.1.2 With its grounds of appeal, the appellant objected to claim 1 of the patent solely on the basis of Article 56 EPC 1973. In the letter of 18 August 2014 an objection to novelty of the subject-matter of claim 1 was raised for the first time with respect to D10. This is therefore a change of the appellant's case and is thus open to admittance only under the Board's discretion. The Board finds however that, at least *prima facie*, D10 at least fails to disclose the stepped bearing of claim 1 and so would not be prejudicial to the novelty of the subject-matter of claim 1. To this finding, the appellant offered no counter argument beyond stating that D10 was also relevant for inventive step considerations.

2.2 Inventive step

2.2.1 D1 in combination with D10

The subject-matter of claim 1 involves an inventive step (Article 56 EPC 1973) whether starting from D1 or D10 as the closest prior art.

D1 can be considered as the closest prior art for assessing inventive step, in that it discloses the most

features of the subject-matter of claim 1. D1 however fails to disclose, in respect to the terminology used in claim 1 of the patent, a stepped bearing including an inner race carrying the shaft, an outer race carrying the movement generating means and a middle fixed race to which said electromagnetic means are integral. Based on these differentiating features of claim 1 over D1, the objective technical problem may be seen as the provision of an alternative bearing structure.

D10 fails to disclose a stepped bearing and so, already at the outset, is unable to guide the skilled person to the required modification of the device of D1 in order to reach the subject-matter of claim 1. D10 discloses a dual bearing arrangement in which the bearings (26, 30) are radially aligned (see Figure and paras. [0010] - [0011]) to thereby essentially fulfil the function of a stepped bearing, yet crucially do not provide a bearing component having its own structural integrity between races. It thus follows that D10 does not guide the skilled person to modify the device of D1 in such a way as to solve the technical problem posed and reach the subject-matter of claim 1 without exercising an inventive step (Article 56 EPC 1973).

2.2.2 The appellant's argument that in D10 the outer ring of the inner bearing 26 and the inner ring of the outer bearing 30 are both fixed to the housing 12 thus together forming a middle fixed race, does not change this conclusion. The two bearing arrangement suggested by the appellant to be structurally equivalent to the stepped bearing claimed is not accepted since the two bearings cannot be regarded as a component having its own structural integrity which, as found under point 1 above, is how the stepped bearing of claim 1 must be

understood.

2.2.3 When considering D10 as the closest prior art starting point for assessing inventive step, as suggested by the appellant, the Board finds (as explained *supra*) that at least a stepped bearing as defined in claim 1 is not disclosed therein. The objective technical problem based on this feature may again be seen as the provision of an alternative bearing structure.

D1 (again, as already stated above) fails to disclose a stepped bearing. Thus the disclosure in D1 does not provide guidance for the skilled person to modify the bearing arrangement in D10 with an alternative bearing of the type claimed. Indeed, D1 explicitly discloses the location of just a single bearing, the exact location of the bearing supporting the shaft 2 being left undefined (see the Figure and col.3, lines 31-33). It is thus not realistic to arrive from D1 at any hint to a (single) bearing component with structural integrity for substitution into the device of D10. It thus follows that D1 does not guide the skilled person to modify the device of D10 in such a way as to solve the technical problem posed and reach the subject-matter of claim 1 without exercising an inventive step (Article 56 EPC 1973).

2.2.4 The appellant's contention that providing a stepped bearing in place of the two bearings in D10 would be an obvious alternative arrangement for the skilled person when considering D1 is not persuasive. Starting from D10, firstly the skilled person would have no incentive to change the functioning bearing arrangement, which already comprises two concentric, radially aligned bearings, for a stepped bearing. Secondly, with D1 not disclosing the location of the two bearings of the

device with respect to one another, it is not apparent how this can guide the skilled person to provide a specific stepped bearing in which the bearing comprises a single component. At least for these reasons alone therefore, and disregarding further features of claim 1 not disclosed by D10, the subject-matter of claim 1 involves an inventive step when starting from D10 and combining this with the technical teaching of D1.

2.2.5 In summary, in view of the documents cited by the appellant in relation to inventive step and the arguments presented by the appellant in support of its objection, the subject-matter of claim 1 is considered to involve an inventive step (Article 56 EPC 1973).

3. Claim 25

3.1 Claim 25 is directed specifically to a pump for recirculating fluid, rather than more generally to a device as in claim 1. In support of its argument against inventive step of the subject-matter of claim 25, the appellant referred to those arguments presented in respect of the subject-matter of claim 1, offering no further arguments. For the same reasons as apply to claim 1, the subject-matter of claim 25 is thus also found to meet the requirements of Article 56 EPC 1973.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

I. Aperribay M. Harrison

Decision electronically authenticated