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Datasheet for the decision of 4 November 2010

Case Number: T 2281/08 - 3.2.08

Application Number: 02021935.8

Publication Number: 1286074

IPC: F16D 23/14

Language of the proceedings: EN

Title of invention:
Clutch release bearing

Patent Proprietor:
NSK LTD

Opponent:
SKF FRANCE

Headword:
-

Relevant legal provisions:
EPC Art. 123(2), 52

Relevant legal provisions (EPC 1973):
56

Keyword:
"Allowability of amendments - yes"
"Admissibility of late-filed document - no"
"Inventive step - yes"

Decisions cited:
-

Catchword:
-

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Case Number: T 2281/08 - 3.2.08

D E C I S I O N
of the Technical Board of Appeal 3.2.08
of 4 November 2010

Appellant: (Opponent)
SKF FRANCE
34, avenue des Trois Peuples
F-78180 Montigny le Bretonneux (FR)

Representative:
Casalonga, Axel
Casalonga & Partners
Bayerstraße 73
D-80335 München (DE)

Respondent: (Patent Proprietor)
NSK LTD
Ohsaki 1-chome
Shinagawa-ku
Tokyo (JP)

Representative:
MacDougall, Donald Carmichael
Marks & Clerk LLP
Aurora
120 Bothwell Street
Glasgow G2 7JS (GB)

Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 7 October 2008 concerning maintenance of European patent No. 1286074 in amended form.

Composition of the Board:

Chairman: T. Kriner
Members: P. Acton
U. Tronser

Summary of Facts and Submissions

I. The appellant (opponent) filed a notice of appeal received at the EPO on 5 December 2008 against the opposition division's interlocutory decision posted on 7 October 2008 maintaining European patent EP-B-1 286 074 in amended form. The appeal fee was paid simultaneously and the statement of grounds was received on 6 February 2009.

II. Oral proceedings took place before the board of appeal on 4 November 2010.

The appellant requests that the decision under appeal be set aside and that the European patent be revoked.

The respondent (patentee) requests that the appeal be dismissed.

III. Independent claim 1 as maintained in amended form reads:

"A clutch release bearing (10) for use between a transmission and a clutch having a diaphragm spring, comprising: an outer ring (12); a rotatable inner ring (11) having an outer diameter, rolling members (15) provided between the outer ring (12) and the inner ring (11); a first seal (17) fixed to the outer ring (12) on the diaphragm side thereof and comprising a labyrinth seal section (17c) located in an external portion of the bearing (10) and having an inner periphery defining a cylindrical shape to form a labyrinth seal with the inner ring (11), and a contact seal section (17b) located in an internal portion of the bearing (10) in slight contact relationship with the inner ring (11);

and a second seal (18) fixed to the outer ring (12) on the transmission side comprising only a labyrinth seal, characterised in that
the ratio of the interference with respect to the outer diameter of the inner ring (11) is from 1/1000 to 1/100 (feature A),
and in that the contact seal section (17b) of the first seal (17) defines the only contact seal bearing against the rotatable inner ring (11) (feature B),
whereby when the bearing comes into contact with the diaphragm spring, generation of noise is suppressed.

The designations "feature A" and feature B" have been added by the board.

IV. The following documents played a role for the present decision:

D1: DE-A-197 09 056
D2: FR-A-2 698 137
D3: DE-A-195 03 217
D20: JP-A-10-103380

V. The appellant's arguments can be summarised as follows:

(a) Allowability of the amendments (Article 100(c) EPC 1973)

Feature B extended beyond the content of the application as filed for the following reasons:

The scope of claim 1 as maintained during the opposition proceedings had been restricted to a bearing with only one contact seal in order to make its

subject-matter novel with respect to D3. Through this limitation, all clutch release bearings with more than one contact seal had been excluded, thus introducing an undisclosed disclaimer into the claim. Since D3 belonged to the state of the art according to Article 54(2) EPC 1973 and did not represent an accidental anticipation, the introduction of this disclaimer was not allowable.

Moreover, even if feature B was not considered to represent an unallowable disclaimer, it did not comply with the requirements of Article 123(2) EPC, since it was shown only in the figures, while the description did not exclude other contact seals being present in other sections of the bearing. On the contrary, paragraph [0047] of the originally filed application disclosed that while seal 17 is always a contact type seal, seal 18 could be either a labyrinth seal or a slight contact seal, hence leaving the option open of having more than one contact seal.

The further lines of argumentation concerning Article 100(c) EPC 1973 which had been mentioned in the written proceedings were withdrawn at the oral proceedings.

(b) Sufficiency of disclosure (Article 100(b) EPC 1973)

At the oral proceedings, the appellant withdrew his objections realting to Article 100(b) EPC 1973.

(c) Admissibility of D2

Document D2, which was mentioned for the first time at the oral proceedings, should be admitted into the appeal proceedings since it was relevant for the assessment of inventive step and since it had already been cited in the opposition proceedings.

(d) Inventive step (Article 100(a) EPC 1973)

D20 represented the closest prior art, since it disclosed all features of claim 1 apart from the specific geometry of the seal on the diaphragm spring side of the bearing. The problem to be solved by the specific choice of the sealing resided in improving the sealing effect while reducing the rubbing noise.

D1 disclosed a clutch release bearing which also aimed at achieving a good sealing effect, while reducing the couple of rubbing forces and hence minimising the rubbing noise (see column 2, lines 2 to 6 and 13 to 15). For the solution of this problem D1 suggested the provision of a seal with a labyrinth portion 12 interacting with a cylindrical part of the inner ring and an axial contact seal portion 13 interacting with a conical portion of the inner ring. The skilled person would also have been aware of D3, which showed that a contact seal portion of a seal which was similar to the one disclosed in D20 could also interact with a cylindrical portion of the inner ring.

For the skilled person, it would have been obvious to apply the teaching of D1 to the sealing of D3, and to introduce this seal into the bearing according to D20.

Since it was also obvious for the skilled person to select an interference ratio according to feature A, this procedure would result in the bearing according to claim 1.

Therefore, the subject-matter of claim 1 did not involve on an inventive step.

The arguments brought forward in the written proceedings, in particular concerning public prior use, were not maintained at the oral proceedings.

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

(a) Allowability of the amendments (Article 100(c) EPC 1973)

Since the feature according to which the contact seal 17 is the only contact seal was formulated in a positive way, it could not be considered to be a disclaimer.

Moreover, this feature was disclosed in all figures of the application and supported by the corresponding passages in the description, namely [0033] and [0034] of the original application.

Therefore, feature B did not extend beyond the content of the application as filed and did not contravene the requirements of Article 123(2) EPC.

(b) Admissibility of D2

D2 had never been used in the written submissions during the appeal proceedings. Therefore, it should not be admitted into the proceedings at such a late stage.

(c) Inventive step (Article 100(a) EPC 1973)

D20 disclosed a bearing which differed from the one according to claim 1 essentially by the specific geometry and arrangement of the seal on the diaphragm side. In particular the contact seal section of this seal was in axial contact with the inner ring.

Modifying the axial contact seal according to D1 in order to adapt it to the bearing according to D3 would go against the teaching of D1. The mode of operation of seal 1 of D1 relied specifically on the axial sealing of lip 13 (see column 2, lines 6 to 13) which allowed radial displacements of the outer ring. The skilled person would not modify the axial seal according to D1 into a radial seal, so that it could be used in the bearing with a cylindrically extending inner ring according to D20.

Consequently, the subject-matter of claim 1 involved an inventive step.

Reasons for the Decision

1. The appeal is admissible.

2. Allowability of the amendments (Article 100(c) EPC 1973)

Feature B according to which the first seal (17) defines the only contact seal does indeed exclude all clutch release bearings with more than one contact seal, thereby restricting the scope of the claim and making its subject-matter novel with respect to D3. However, feature B cannot be considered to represent a disclaimer, let alone an undisclosed disclaimer, for the following reasons.

A disclaimer is an amendment resulting in the incorporation of a negative technical feature into a claim, typically excluding specific embodiments or areas from a general feature.

In contrast to this, the feature at issue here is a positive technical feature and for that reason alone cannot be considered a disclaimer.

Furthermore, it is an essential purpose of the features of a claim to delimit the claimed subject-matter from the known prior art. Limiting the subject-matter of a claim in order to make it novel with respect to a specific document of the prior art is the normal way for an applicant or patent proprietor to define a claim which complies with the requirements of Article 52 EPC. Therefore, a feature cannot be considered to represent a disclaimer only because it delimits the scope of the claim from a specific prior art and hence makes the subject-matter of the claim novel with respect to it.

Since feature B cannot be regarded as a disclaimer, it remains to assess whether or not it was disclosed in the application as filed.

The description leaves both options open, either of having a contact seal only on the diaphragm spring side or of having a second contact seal on the transmission side as well (see [0047]). All the figures show embodiments where the seal on the diaphragm spring side is the only contact seal of the bearing.

Hence, feature B was clearly disclosed in the file as originally filed and does not lead to an extension of the content of the patent beyond the application as filed. Therefore, claim 1 fulfils the requirements of Article 123(2) EPC.

3. Admissibility of D2

D2 had never been addressed in the appellant's written submissions during the appeal proceedings and was used for the first time during oral proceedings.

It is correct that D2 had been cited during the opposition proceedings. However, since the appeal proceedings constitute independent proceedings, the documents cited in opposition proceedings will not automatically be considered during the subsequent opposition appeal proceedings.

Therefore, D2 has to be considered late-filed. Since it does not represent prior art which was more relevant than that field in time and since it was brought up at

the very end of the oral proceedings, it was not admitted into the proceedings.

4. Inventive step

4.1 The most relevant state of the art is represented by the clutch release bearing according to D20, which discloses (see in particular Figure 2):

A clutch release bearing (10) for use between a transmission and a clutch having a diaphragm spring, comprising:

an outer ring (12); a rotatable inner ring (11) having an outer diameter, rolling members (15) provided between the outer ring (12) and the inner ring (11); a first seal (17) fixed to the outer ring on the diaphragm side thereof and a second seal (18) fixed to the outer ring (12) on the transmission side comprising only a labyrinth seal.

4.2 The technical object to be achieved by the clutch release bearing according to claim 1 can be regarded as the provision of increased sealing effects (see [0008]) in combination with reduced noise (see [0028]).

This object is achieved by the provision of features A and B.

4.3 D1 discloses a clutch release bearing with a seal on the diaphragm side which comprises a labyrinth section (12) and contact section (13) whereby the contact section represents an axial seal which is in contact with a conical surface of the inner ring. As specified

in column 2, lines 2 to 13, the axial seal (13) is used in order to achieve good sealing characteristics even in the event of a radial displacement of the outer ring. Therefore, D1 clearly teaches the use of an axial contact seal in combination with a labyrinth seal.

D3 discloses a clutch release bearing with a two-lip seal (26) on the diaphragm side, whereby the inner ring has a cylindrical shape in the region of both lips of the seal (26) and at least the inner lip functions as a radial seal.

Since D1 clearly underlines the advantages of an axial contact seal (1), which interacts with an at least partly radially extending surface, the skilled person would not have any reason to modify this seal in such a way that it could be arranged on an axially extending inner ring as shown in D3. Such a modification would be against the teaching of D1.

If the skilled person were to apply the axial seal according to D1 to the clutch release bearing according to D20, he would modify the geometry of the inner ring according to D20 and create a conical or radial surface to interact with an axial contact seal. However, this would not result in the subject-matter of claim 1.

Moreover, there is no reason to provide the seal according to D1 with of the specific range of interference ratio (feature A).

Therefore, the subject-matter of claim 1 as maintained in amended form during opposition proceedings involves an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

V. Commare T. Kriner