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**Datasheet for the decision
of 9 November 2010**

Case Number: T 1588/08 - 3.2.08

Application Number: 03001090.4

Publication Number: 1312821

IPC: F16C 35/063

Language of the proceedings: EN

Title of invention:

Bearing unit for vehicle wheel support

Patentee:

NSK LTD

Opponent:

Schaeffler KG

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56

Relevant legal provisions (EPC 1973):

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Keyword:

"Transfer of opponent's status (no)"

"Novelty (yes)"

"Inventive step (yes)"

Decisions cited:

G 0004/88, G 0003/97, G 0002/04

Catchword:

-



Case Number: T 1588/08 - 3.2.08

D E C I S I O N
of the Technical Board of Appeal 3.2.08
of 9 November 2010

Appellant: Schaeffler KG
(Opponent) Industriestrasse 1-3
D-91074 Herzogenaurach (DE)

Representative: Dörring, Jochen

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

Representative: Moreland, David
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 13 June 2008
rejecting the opposition filed against European
patent No. 1312821 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: T. Kriner
Members: M. Alvazzi Delfrate
A. Pignatelli

Summary of Facts and Submissions

- I. By decision posted on 13 June 2008 the opposition division rejected the opposition against European patent No. 1 312 821.
- II. The appellant (opponent) lodged an appeal against this decision on 11 August 2008, filing at the same time the statement setting out the grounds for appeal. The appeal fee was paid on 12 August 2008.
- III. Oral proceedings before the board of appeal were held on 9 November 2010.
- IV. The appellant requested that the decision under appeal be set aside and that the patent be revoked. Moreover, it requested that opponent status be transferred to Schaeffler Technologies GmbH & Co. KG.
- V. The respondent (patent proprietor) requested that the appeal be dismissed or that the patent be maintained on the basis of one of the first to third auxiliary requests filed on 26 February 2009.
- VI. Claim 1 of the patent as granted (main request) reads as follows:

"A bearing unit for vehicle wheel support comprising a shaft (2;2c) having a mounting flange (6), a first inner raceway (7) provided thereon, a step portion (8) formed on one end portion thereof, a crimped portion (19) formed on an end side of the step portion (8), and an inner ring (3) fitted onto the step portion (8) of the shaft (2;2c), and having an inner ring raceway (9),

the inner ring (3) being fixed to the shaft (2;2c) by the crimped portion (19) of the shaft (2;2c), and a constant velocity joint (36) having a main portion (39) and fixed to the shaft (2;2c) with an axial force, and characterized in that said crimped portion (19) of the shaft (2;2c) has a flat end face (42) with no heat treatment on the outside thereof, and the flat end face (42) of the shaft (2;2c) is abutted on an axially outer surface of the main portion (39) of the constant velocity joint (36) to support said axial force."

VII. The following documents are relevant for the present decision:

D1: DE -C- 3 636 243;

D6: DE -A- 4 425 732;

D7: H. Hofmann "Entwicklung einer Wälznietverbindung am Beispiel einer PKW Vorderachswelle" DVM Bericht 121, 1995; and

Declaration dated 28 January 2010 by E. Duschl and A. Schulenburg.

VIII. The appellant's arguments can be summarised essentially as follows.

Transfer of opponent status

On 1 February 2010 the "operatives Geschäft" and all intellectual property rights of the Schaeffler KG had been transferred to Schaeffler Technologies GmbH & Co. KG, as evidenced by the declaration dated 28 January 2010 submitted with letter dated 8 October 2010. Therefore, the assets in the interests of which the

opposition had been filed, and in particular the patent department, had been transferred to the latter company. Accordingly, the opponent's status should be transferred to it too.

Novelty

D7 disclosed all the features according to the preamble of claim 1. Moreover, the performance of a heat treatment of the crimped portion was not mentioned in this document. On the contrary, the process of forming said portion as shown in Figure 7 of D7 implied that no heat treatment of this portion had been carried out. Therefore, the end surface of the shaft shown in D7 was obviously not heat treated. Furthermore, Figure 11 showed that said end portion, albeit curved, was smooth. Since the term "flat" did not only mean level but could also be seen as an equivalent to smooth, the end surface of the shaft shown in Figure 11 of D7 could be regarded as being flat. Accordingly, the subject-matter of claim 1 lacked novelty in view of D7.

Inventive step

In the event that the subject-matter of claim 1 was considered to be novel over D7 by virtue of the flat end surface of the crimped portion, it did not involve an inventive step.

It was obvious to modify the shape of the crimped portion shown in D7, for instance by reducing its thickness and rendering its end surface flat, in order to avoid its deformation or in order to reduce the axial size of the bearing unit.

Furthermore, it was obvious to arrive at the bearing unit of claim 1 starting from that disclosed in D1 too. The subject-matter of claim 1 differed from the latter bearing unit only in that the crimped portion had a flat end. D1 disclosed a tothing on the end face of the shaft abutting on the constant velocity joint. For the purpose of manufacturing the tothing in a simple way, it was obvious to select a shape where the teeth or the spaces between them had flat portions. Since claim 1 of the patent in suit did not specify the arrangement and the extension of the flat surface, no difference could be seen between this surface and one of said flat portions.

Accordingly, the subject-matter of claim 1 did not involve an inventive step starting from either D7 or D1.

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

Novelty

The expression "flat end face" comprised in claim 1 of the patent in suit clearly meant a level face and not a smooth face. This view was supported by the description and Figure 10. Hence, the curved end surface of the crimped portion of the shaft shown in Figure 11 of D7 could not be regarded as being flat.

Moreover, it had to be assumed that the outside of said curved end face, being subject to high loads, had undergone a heat treatment to increase its hardness.

Since it was clear that a heat treatment in the sense of the patent in suit was a hardening heat treatment, D7 did not disclose that the end face of the crimped portion shown in Figure 11 had no heat treatment.

Additionally, it could also be questioned whether or not the main portion of the constant velocity joint of Figure 11 was fixed to the shaft with an axial force.

Therefore, the subject-matter of claim 1 was novel.

Inventive step

Starting from the bearing unit shown in D7, the claimed unit achieved the object of preventing deformation of the crimped portion and looseness of the bearing, as described in paragraph [0109] of the patent in suit.

D7 disclosed that the geometry of the crimped portion had been carefully optimised. Therefore, it was not obvious to modify said geometry to achieve the object above. Moreover, even in this case the person skilled in the art would rather have chosen the arrangements proposed by D1 or D6 and not that according to present claim 1.

Nor was the claimed subject-matter obvious starting from the bearing disclosed in D1. The person skilled in the art had no reason to manufacture the toothing shown in this document with flat portions on the teeth or in the spaces between them. Additionally, even in this case he would not obtain a flat end surface in the sense of the patent.

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

Reasons for the Decision

1. The appeal is admissible.
2. The request for transfer of opponent status cannot be allowed.

According to the jurisprudence of the Enlarged Board of Appeal (see G 4/88; G 3/97; G 2/04), the transfer of opponent status to a third party is possible only as part of the opponent's business assets together with the assets in the interests of which the opposition was filed.

According to the declaration dated 28 January 2010 submitted by the appellant, the "operatives Geschäft" and all intellectual property rights of the Schaeffler KG were transferred to Schaeffler Technologies GmbH & Co. KG on 1 February 2010.

However, despite the board's request in the communication dated 20 October 2010, no submissions or evidence have been submitted to explain what the "operatives Geschäft" was. The appellant simply said that all the company's profit-making business, and in particular the patent department of Schaeffler KG, had been transferred to Schaeffler Technologies GmbH & Co. KG.

The declaration and explanations submitted are not sufficient to establish whether the assets in the interests of which the opposition was filed have been transferred, especially because the concept "operatives Geschäft" has no officially recognised legal meaning and has not been described in detail. The transfer of patents or a patent department does not justify the transfer of party status when the transferring party is the opponent.

Since the transfer of the opposition has not been sufficiently proven, the original party continues to be regarded as party to the proceedings.

The representative of the opponent at the oral proceedings had an authorisation signed by the original party too, so he was able to continue to represent the latter party in the proceedings.

3. Novelty

D7 undisputedly discloses in Figure 11 a bearing unit for vehicle wheel support comprising a shaft having a mounting flange, a first inner raceway provided thereon, a step portion formed on one end portion thereof, a crimped portion formed on an end side of the step portion, an inner ring fitted onto the step portion of the shaft and a constant velocity joint having a main portion, wherein the inner ring has an inner ring raceway and is fixed to the shaft by the crimped portion of the shaft (see Figure 11).

As shown in Figure 11, the constant velocity joint is fixed to the bearing by means of a spring (see page 7,

last paragraph), which is arranged so as to inevitably exert some axial force. Therefore, D7 also discloses that the constant velocity joint is fixed to the shaft with an axial force. This axial force is supported by the end face of the crimped portion of the shaft, which is abutted on an axially outer surface of the main portion of the constant velocity joint (see Figure 11).

Moreover, D7 does not disclose any heat treatment of the crimped portion. Heat treatment is also not usual in the forming process disclosed for obtaining the crimped portion ("Wälznietprozess"). Therefore, the crimped portion of the shaft of Figure 11 of D7 has to be considered as having an end face with no heat treatment on the outside thereof.

Nevertheless, Figures 8, 9 and 11 clearly show that said end face is a curved surface. The appellant argued that, since the curved surface shown in D7 was smooth, it could be regarded as "flat". This argument is not convincing. In the present case the term "flat" clearly means a level surface. This is in accordance with the description (paragraphs [0108] and [0109]) and the drawings (Figure 10) of the patent in suit, which indicate as a flat surface a level surface. Therefore, the end face of the crimped portion shown in Figure 11 of D7 cannot be regarded as flat.

Accordingly, the subject-matter of claim 1 of the main request is novel.

4. Inventive step

4.1 The object underlying the claimed invention, starting from the bearing unit disclosed in D7, is regarded as preventing permanent set in the crimped portion and looseness of the bearing. This is achieved by the flat end face of the crimped portion, which reduces the surface pressure applied to the contact portions when the parts are tightened together (see paragraph [0109]).

4.2 At the priority date of the patent in suit it was not obvious to achieve the object above according to present claim 1.

D7 itself clearly discloses the crimped portion as having an optimal geometry resulting from extensive calculations and process studies (see page 5, second paragraph). Therefore, the person skilled in the art would not have tried to modify this geometry. Moreover, even considering it, he would not have found any hint in the prior art to the geometry recited in present claim 1. In both the cited documents D1 and D6 the joint between the shaft and the constant velocity joint is realised differently, namely by a tothing in D1 (see claims 1 to 3) or by an intermediate element in D6 (see claim 1).

Therefore, starting from the bearing of D7, the provision of a crimped portion with a flat end face which is abutted on an axially outer surface of the main portion of the constant velocity joint cannot be regarded as being obvious.

4.3 The appellant's submission that it was obvious to arrive at the claimed subject-matter starting from the bearing disclosed in D1 is not convincing either.

In this case too, the object underlying the claimed invention is seen as preventing permanent set in the crimped portion and looseness of the bearing.

The appellant has not proven that it was obvious to achieve that object by realising the toothing disclosed in D1 with a flat portion on the teeth or in the spaces between them. Moreover, contrary to the appellant's submission, even in such a case no flat end face of the crimped portion would be obtained but rather a flat end portion of the teeth or of the spaces between them.

4.4 In view of the foregoing the subject-matter of claim 1 of the main request involves an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

V. Commare

T. Kriner