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Datasheet for the decision of 18 December 2012

Case Number: T 2074/11 - 3.2.06

Application Number: 03700594.9

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Title of invention:
ELEVATOR DRIVE BELT

Applicant:
Nitta Corporation

Relevant legal provisions:
EPC Art. 123(2), 84

Keyword:
Requirements of Articles 123(2) and 84 EPC - (not met)

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Case Number: T 2074/11 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 18 December 2012

Appellant: (Applicant)	Nitta Corporation 4-26, Sakuragawa 4-chome, Naniwa-ku Osaka-shi, Osaka 556-0022 (JP)
Representative:	Calderbank, Thomas Roger Mewburn Ellis LLP 33 Gutter Lane London EC2V 8AS (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted 13 May 2011 refusing European patent application No. 03700594.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: M. Harrison
Members: G. de Crignis
K. Garnett

Summary of Facts and Submissions

I. The Examining Division refused European patent application No. 03700594.9 holding that claim 1 of the main request and of auxiliary request 1 did not meet the requirement of Article 123(2) EPC and that claim 1 of auxiliary request 2 was not clear (Article 84 EPC).

II. The appellant (applicant) filed an appeal against this decision and in its statement setting out the grounds of appeal filed a main request and three auxiliary requests.

III. In a communication sent as an annex to a summons to oral proceedings the Board addressed various issues concerning disclosure and clarity and indicated that none of the requests appeared allowable.

IV. With letter of 15 November 2012, the appellant filed an amended main request and amended first to third auxiliary requests.

V. Oral proceedings were held on 18 December 2012. The appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the main request, alternatively the first to third auxiliary requests filed with the letter of November 2012.

Claim 1 of the main request has the following text:

"An elevator with an elevator rope (3) linking an elevator cage (1) and a counterweight (2) together, the elevator having an elevator drive belt (5) which applies a friction force to the elevator rope (3) and drives the rope (3),

characterised in that:
the hardness of rubber material of the belt (5) is so as to suppress creep slip due to a shearing strain while the elevator is in operation, and the belt (5) has a multi-layered structure including a surface layer (11) and an intermediate layer (15) thereunder, the intermediate layer (15) is made of rubber layer of a hardness equal to or higher than that of the surface layer (11)."

Claim 1 of the first auxiliary request additionally defines the hardness of the rubber material of the belt (5) as being "50 degrees to 90 degrees".

Claim 1 of the second auxiliary request replaces the feature "the hardness of rubber material of the belt (5) is 50 degrees to 90 degrees" in the first auxiliary request by "the hardness of rubber material of the belt (5) is 50 degrees to 90 degrees according to JIS-A Standard".

Claim 1 of the third auxiliary request replaces the feature "the hardness of rubber material of the belt (5) is 50 degrees to 90 degrees" in the first auxiliary request by "the Shore A hardness of the rubber material of the belt (5) is 50 degrees to 90 degrees".

VI. The arguments of the appellant may be summarised as follows:

Concerning the main request, the feature "50 degrees to 90 degrees" was not present (compare originally filed claim 1) since it was not an essential feature because its function of suppressing creep slip was already defined and anyway it had no clear technical meaning. The skilled person knew that there were multiple tests

possible for the determination of hardness which gave different results. Accordingly, the skilled person had no instruction on which test to use. The only meaning which could be attributed to this feature was that some sort of hardness was required and such hardness had to comply with the functional feature "to suppress creep slip", which was all that was required for establishing the correct hardness of the rubber material.

The meaning of "creep slip" could be derived from the application as filed on page 2, line 22 to page 3, line 3, which passage set out that it was the rubber hardness which made it possible "to secure a friction coefficient for a grip force on the elevator rope which is slippery due to oil oozing from inside (a lower rubber hardness is preferable), and enables to suppress creep slip due to a shearing strain at the time of a halt of the elevator (a higher hardness is better). The conflicting important properties become compatible in the present invention." Hence, this functional feature limited the claim and allowed the determination of the hardness of the rubber. Moreover, such feature was clear for a skilled person.

Concerning the first auxiliary request, the feature of hardness being 50 to 90 degrees was now inserted. The skilled person could decide based on his general technical knowledge which test to apply for the determination of hardness and would reject unsuitable tests for such determination. The choice of the test had to be consistent with the results being suitable to arrive at a rubber material meeting the condition of suppressing creep slip.

Concerning the second auxiliary request, the range for the hardness of the rubber material being from 50 to 90

degrees was linked to a JIS-standard procedure. In view of the application originating from a Japanese company and having a Japanese priority, it was obvious that the correct determination procedure was based upon a Japanese standard.

Concerning the third auxiliary request, the range of the hardness of the rubber material being from 50 to 90 degrees was linked to Shore A-hardness. It was known to the skilled person that such a hardness was the most common and most suitable for testing rubber materials. It was also readily convertible to the JIS-A standard. Only a small number of tests were suitable to determine such hardness, and the alternative IRHD test produced the same results in the relevant part of the range or only slightly deviating results.

Reasons for the Decision

1. Main request - claim 1

1.1 Originally filed claim 1 includes the feature "and a hardness of rubber material of the belt is about 50 degrees to about 90 degrees". Such feature is not present in claim 1 of the main request.

1.2 When specifying the hardness of rubber materials, this feature however relates to a particular selection of rubber materials. Accordingly, such a range constitutes an essential feature in that it provides a technical contribution to the claimed subject-matter. Any amendment to the range would have the effect of modifying the claimed subject-matter. Although it was argued that the 50 to 90 degrees range if unclear would

have no relevant technical meaning and could therefore be omitted, the Board cannot agree. Whilst the terminology lacks clarity in the absence of the actual test which should be applied, there is no evidence to suggest that it is devoid of technical meaning. Merely because scales of different standards are not readily convertible, does not mean there is no technically relevant area of overlap.

1.3 The appellant's view that the functional feature which defined the hardness is already sufficient to define the hardness since it is such "as to suppress creep slip due to a shearing strain while the elevator is in operation" is not convincing.

It is not clear or explained in the application what is meant by "creep slip" in the context of the disclosed invention, contrary to the requirement of Article 84 EPC. Moreover, there is no test disclosed in the application which would allow the determination of whether creep slip is suppressed due to a shearing strain while the elevator is in operation or not; and even here, the meaning of "in operation" is entirely vague. A certain amount of creep is always present in this context, since a complete avoidance of creep appears technically unrealistic. Hence for the "suppression of creep slip" it would first be necessary to identify what is to be understood by the term "creep slip" and second it would be necessary to know how to identify when it is considered as having been suppressed.

1.4 In this regard, it is to be noted that the terms "creep" and "slip" are usually not used in combination. "Creep" is related to shearing strain and "slip" is in this context either redundant or it can only be said to

have an unidentified meaning. The citation of page 2, line to page 3, line 3 of the application as filed by the appellant does not help understanding the meaning of "creep slip". No further enlightening disclosure is present in the application, nor did the appellant submit that there was any.

1.5 Even limiting the understanding of this expression to the concept that only "creep" should be suppressed, a test method would be needed in order to reliably identify a suppression thereof. The whole specification is silent on such issue, and it is evident that certain conditions in this respect would have to be defined if a clear understanding is to be facilitated (e.g. under which load or under which operating conditions). Hence, no clear and unambiguous disclosure in this respect is present. Accordingly, the rubber hardness - or a range therefore - cannot be determined on the basis of such a functional feature being met.

1.6 Accordingly, the subject-matter of claim 1 extends beyond the content of the originally filed application (Article 123(2) EPC). Also, claim 1 is not clear as required according to Article 84 EPC. Hence, the main request is not allowable.

2. First auxiliary request - claim 1

2.1 Claim 1 of the first auxiliary request additionally defines the hardness of the rubber material of the belt (5) as being from "50 degrees to 90 degrees". Such feature is disclosed in claim 1 as originally filed.

2.2 There exists a variety of determination methods for hardness values. The examining division pointed to the (international) recognised standards such as the ISO,

ASTM and JIS standards with respect to the Shore A hardness and that also different hardness values could be applied (for example Shore D). Accordingly, the claimed subject-matter is not clearly defined and the requirement of clarity as set out in Article 84 EPC is not met.

2.3 The fact that the functional feature included in claim 1 refers to the hardness being so as "to suppress creep slip" does not remedy this objection. As set out under points 1.3 to 1.6 above, there is neither a definition which could clarify what should be understood by the wording "creep slip" nor is there a determination method disclosed for measuring whether creep slip is suppressed.

2.4 Hence, the first auxiliary request is not allowable.

3. Second auxiliary request - claim 1

3.1 Claim 1 of the second auxiliary request additionally defines the hardness of the rubber material of the belt (5) as being from "50 degrees to 90 degrees according to JIS-A Standard".

3.2 No literal disclosure for the range of the rubber hardness being determined "according to JIS-A Standard" is present in the application as originally filed.

3.3 Although it might be highly likely that a Japanese inventor would rely on JIS standards, the disclosure is not related to such a standard. Many companies nowadays work on an international basis, and such companies have access to all international standards with a view to producing for a global economy. The requirement of a clear and unambiguous disclosure is not related to a

degree of probability but to explicit or implicit disclosure. No literal disclosure is present. Implicitly such disclosure cannot be considered as being present in view of the variety of tests being available and used world-wide. Hence, the requirement of Article 123(2) EPC is not met.

3.4 Moreover, the objection of lack of clarity as set out above under points 1.3 to 1.6 still applies and is not cured by the amendment. Thus, the second auxiliary request is not allowable.

4. Third auxiliary request - claim 1

4.1 Claim 1 of the third auxiliary request additionally defines the hardness of the rubber material of the belt (5) as being from "50 degrees to 90 degrees" in terms of "Shore A hardness".

4.2 There is no literal disclosure for "Shore A" hardness in the application as originally filed. In order to demonstrate that Shore A hardness was implicitly disclosed, and would be understood by the skilled person to be applicable, the appellant submitted various documents during the examination proceedings.

4.3 The document printed out from the internet publication "Plastics International" with the title "Hardness Scale - Durometer Comparisons of Materials" demonstrates that rubbers generally have a Shore A durometer hardness of from about 20 to about 90 degrees and that when Shore D durometer hardness is used, rubber materials have values of less than 45 degrees. The graph further demonstrates that Rockwell-R durometer values are not compatible with rubber materials.

4.4 Additionally, the document "Rubber Physical testing method Guidebook to New JIS", edited by the society of Rubber Industry, Japan, August 1996, demonstrates that JIS K6253 Type A durometer, ASTM D 2240 type A durometer and Shore A hardness meter represent three kinds of durometer which produce values which are convertible one to another and are applicable for rubber material.

4.5 However, there exists at least one further method (ISO 48 Test Standard) according to which the International Rubber Hardness Degree (IRHD) is determined, which is used for rubber materials. No linear relationship exists for correlating results obtained by IRHD and Shore A test methods.

4.6 Hence, the submitted documents confirm the presence of a multitude of test methods and that some of these methods produce results which are convertible. However, these documents are not suitable as evidence that Shore A hardness is implicitly disclosed in the filed application with regard to the claimed range for the hardness of the rubber material. Accordingly, no clear and unambiguous disclosure in this respect is present and the requirement of Article 123(2) EPC is not met.

4.7 Moreover, the objection of lack of clarity as set out above under points 1.3 to 1.6 applies as before. For all these reasons, the third auxiliary request is not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. H. A. Patin M. Harrison

Decision electronically authenticated