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**Datasheet for the decision  
of 23 June 2016**

**Case Number:** T 2570/12 - 3.2.06

**Application Number:** 02015041.3

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**IPC:** B66B7/12, D07B1/16, D07B1/22

**Language of the proceedings:** EN

**Title of invention:**  
Suspension rope wear detector

**Patent Proprietor:**  
Inventio AG

**Opponent:**  
Otis Elevator Company

**Headword:**

**Relevant legal provisions:**  
EPC Art. 123(2)  
RPBA Art. 13(1)

**Keyword:**

Amendments - extension beyond the content of the application  
as filed (yes)

Late-filed auxiliary requests - admitted (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

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Case Number: T 2570/12 - 3.2.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.06**  
**of 23 June 2016**

**Appellant:** Inventio AG  
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**Respondent:** Otis Elevator Company  
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**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted on 22 October 2012 revoking European patent No. 1275608 pursuant to Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman** M. Harrison  
**Members:** M. Hannam  
M.-B. Tardo-Dino

## **Summary of Facts and Submissions**

- I. An appeal was filed by the appellant (proprietor) against the decision of the opposition division revoking European Patent No. 1 275 608, in which it found that the subject-matter of claim 1 according to each of a main request and a first auxiliary request extended beyond the content of the application as filed (Article 100(c), 123(2) EPC).
- II. The appellant requested that the decision be set aside and the patent be maintained according to a first, second or third auxiliary request, all as filed with its grounds of appeal.
- III. In its reply the respondent (opponent) requested that the appeal be dismissed.
- IV. The Board issued a summons to oral proceedings and a subsequent communication containing its provisional opinion, in which it indicated *inter alia* that the subject-matter of claim 1 of each request appeared not to meet the requirement of Article 123(2) EPC, the subject-matter of claim 1 of the main request further meeting with objections under Article 123(3) EPC.
- V. With letter of 23 May 2016 the appellant filed a new set of requests comprising a main request and auxiliary requests 1 to 3, replacing the requests previously on file.
- VI. Oral proceedings were held before the Board on 23 June 2016, during which the appellant withdrew auxiliary requests 1 to 3 and replaced these with a single auxiliary request. The final requests of the parties were as follows:

The appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of the main request filed with the letter of 23 May 2016 or on the basis of the auxiliary request filed during the oral proceedings.

The respondent requested that the appeal be dismissed.

VII. Claim 1 of the main request reads as follows:

"A suspension rope wear detector (2, 32, 52) in an elevator comprising

- a suspension rope (4, 43, 54) and a sheath (8, 38, 58),  
the suspension rope (4, 43, 54) being formed from a plurality of load bearing strands (6, 36, 56) extending longitudinally to form the suspension rope (4, 43, 54), said strands (6, 36, 56) being formed of a first material and  
the sheath (8, 38, 58) covering said strands (6, 36, 56), said sheath (8, 38, 58) being formed of a second material;
- a sensor means for sensing wear at a surface (8a, 38a, 58a) and monitoring the surface of said sheath (8, 38, 58) and generating a wear indication output signal (22, 42, 62) upon sensing a characteristic feature of the suspension rope representing a predetermined amount of wear (8b, 38b, 58b) of said sheath (8, 38, 58); and
- an output connected to said sensor means and adapted to be connected to an elevator control device for transmitting said wear indication output signal; characterized in that said characteristic feature being one of

- an electrical contact of at least one of said strands (6) with a member (10) contacting said sheath surface (8a, 8b),
- a distance between said sheath surface (38a, 38b) and

at least one of said strands (36), and  
- a change in color of said sheath surface (58a, 58b)."

Claim 1 of the auxiliary request reads:

"A suspension rope wear detector (2, 32, 52) in an elevator comprising

- a suspension rope (4, 43, 54) and a sheath (8, 38, 58),

the suspension rope (4, 43, 54) being formed from a plurality of load bearing strands (6, 36, 56) extending longitudinally to form the suspension rope (4, 43, 54), said strands (6, 36, 56) being formed of a first material and the sheath (8, 38, 58) covering said strands (6, 36, 56), said sheath (8, 38, 58) being formed of a second material;

said strands (6, 36, 56) being formed of an electrically conductive material; and

said sheath (8, 38, 58) being formed of an electrically insulating material;

- a sensor means for sensing wear at a surface (8a, 38a, 58a) of said sheath (8, 38, 58) and generating a wear indication output signal (22, 42, 62) representing at least one predetermined wear condition of the suspension rope upon sensing a characteristic feature of the suspension rope representing a predetermined amount of wear (8b, 38b, 58b) of said sheath (8, 38, 58);

wherein said sensor means includes an electrically conductive member (10) abutting said sheath surface (8a, 8b) and a power supply (14) connected between said strands (6) and the member (10), said wear indication output signal (22) being current flow between at least one of said strands (6) and the conductive member (10) when said surface (8a, 8b) of the sheath (8) is worn away to expose said at least one strand (6) and permit contact between said at least one strand (6) and the

member (10); and  
wherein said sensor means includes an indicator (16)  
connected to said power supply (14) for providing a  
visual display (18) representing said predetermined  
amount of wear; and  
- an output connected to said sensor means and adapted  
to be connected to an elevator control device for  
transmitting said wear indication output signal;  
characterized in that said characteristic feature is an  
electrical contact of at least one of said strands (6)  
with a member (10) contacting said sheath surface (8a,  
8b)."

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

The basis for the subject-matter of claim 1 of the main request was provided by claim 1 as filed in combination with claim 11 as filed. One and the same sensor means were disclosed in claim 1, claim 11 and the entirety of the patent such that these claims could be combined without a direct claim dependency relationship. Claim 11 disclosed the characteristics of the rope which could be sensed by the sensor means as a self-contained disclosure and which could thus be combined with the features of claim 1 as filed. Furthermore, since the expression 'sensing of wear at a surface' was encompassed within the expression 'monitoring of a surface', any perceived difference in action of the sensor means was non-existent; the sensor means of claims 1 and 11 were the same. Also, para. [0018] as filed disclosed the characteristic features of the suspension rope sensed by the sensor means and this provided further support for these features in claim 1.

As regards a basis for the subject-matter of claim 1 of the auxiliary request, this was to be found in paras.

[0006], [0011], [0016] and Figures 1a and 1b as filed in combination with claim 1. Particularly Figures 1a and 1b disclosed all features of claim 1 such that a direct and unambiguous basis was to be found there.

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

The subject-matter of claim 1 of the main request did not meet the requirement of Article 123(2) EPC. The sensor means of claim 1 as filed were for monitoring a surface of the sheath whereas those of claim 11 as filed were for sensing wear at a surface of the sheath, and were as such comprised in the rope, not the wear detector. At least the sensor means of each claim were thus directed to wholly different embodiments such that the claims could not be combined. Furthermore, para. [0018], indeed the whole description, disclosed solely sensor means for monitoring the surface of the suspension rope sheath, such that no conclusion could be drawn that the sensor means of claims 1 and 11 as filed were unambiguously one and the same.

Regarding the auxiliary request, the subject-matter of claim 1 did not *prima facie* meet the requirement of Article 123(2) EPC. At least member 10 was not indicated as being 'grounded' in claim 1, which amounted to an unallowable intermediate generalisation of what was disclosed in the application as filed.

## **Reasons for the Decision**

Main request



1. Article 123(3) EPC

No objections under Article 123(3) EPC were maintained by the respondent against claim 1 of the main request of 23 May 2016. The Board also sees no objection in this regard.

2. Article 123(2) EPC

The subject-matter of claim 1 does not meet the requirement of Article 123(2) EPC.

2.1 The alleged basis for the subject-matter of claim 1 provided by the appellant is a combination of claim 1 and claim 11 as originally filed, further supported by the description in paragraph [0018]. Both of these claims are however separate, independent claims such that, on the merits of these claims alone, there is no basis for their combination in order to provide the necessary direct and unambiguous disclosure of the claimed subject-matter, contrary to the requirement of Article 123(2) EPC. It is further noted that, even if a combination of the features of claims 1 and 11 as filed were to be taken as the basis for claim 1, claim 11 as filed is directed to an elevator suspension rope comprising *inter alia* a sensor means for sensing wear. The omission of this feature from present claim 1 thus results in its subject-matter being unallowable under Article 123(2) EPC compared to what is disclosed by a combination of claims 1 and 11 as filed.

2.2 Regarding the appellant's argument that one and the same sensor means are disclosed in the entirety of the patent application with the consequence that claims 1 and 11 as filed can be combined, this is not persuasive

for reasons as follows:

- 2.2.1 Regarding claim 1 as filed, this includes a sensor means for monitoring a surface of the sheath; conversely claim 11 as filed includes a sensor means for sensing wear at a surface of the sheath. The actions of 'monitoring a surface' and 'sensing wear at a surface' are clearly not the same, such that the appellant's argument in this respect already fails.
- 2.2.2 The appellant's suggestion that 'sensing of wear at a surface' was encompassed within the expression 'monitoring of a surface' is also not convincing. No justification of this was presented by the appellant and indeed no description of the sensor means in the patent application supports such a specific interpretation of the sensor means or their function. In this respect it is further noted that, other than in claim 11 as filed, 'sensor means for sensing wear at a surface' are not disclosed at all in the application; all further disclosures of sensor means in the description relate to that in claim 1 as filed i.e. sensor means for monitoring a surface of the sheath. The application as filed thus provides no basis for the view that 'sensing of wear' is encompassed within 'monitoring of a surface'.
- 2.2.3 The appellant's argument that claim 11 provided an isolated, self-contained disclosure of the embodiments of the sensor means which allowed certain elements of it to be combined with claim 1, itself comprising the same sensor means, is not accepted. As indicated in points 2.2.1 and 2.2.2 above, the sensor means in claim 1 and claim 11 are not unambiguously the same sensor means; they have different functions, as indicated in the respective claims. To equate the sensor means of

the respective claims thus has no unambiguous basis in the application as filed.

2.2.4 In summary therefore, the sensor means of claim 1 and claim 11 as filed are not directly and unambiguously disclosed as one and the same sensor means such that a combination of claim 1 and certain elements from claim 11 as filed, based on the argument that the sensor means claimed therein are common, has no basis and thus the claimed subject-matter contravenes Article 123(2) EPC.

2.3 The appellant's contention that para. [0018] as filed also disclosed the characteristic features of the suspension rope sensed by the sensor means and that this provided a further basis in the disclosure for the combination of these features in claim 1 is not accepted. Whilst para. [0018], particularly col. 6, lines 4 to 14, does indeed disclose various embodiments of sensor means as an electrical circuit, a proximity sensor and an optical sensor, this does not provide a direct and unambiguous indication that claims 1 and 11 as filed can be combined to form the subject-matter of claim 1. Alternatively, if this passage were taken as the disclosure of the claimed characteristic features of the sensor for combination with the other elements found in claim 1 as filed to result in claim 1 now under consideration, a basis at least for 'the strands being formed of a first material' and 'the sheath being formed of a second material' would be missing, since these features are only disclosed in claim 11 as filed.

2.4 For the above reasons the subject-matter of claim 1 does not meet the requirement of Article 123(2) EPC. The main request is thus not allowable.

3. Auxiliary request

3.1 Admittance (Article 13(1) RPBA)

3.1.1 In appeal proceedings, the Rules of Procedure of the Boards of Appeal (RPBA) apply. Article 12(2) RPBA specifies that the statement of grounds of appeal and reply must contain the party's complete case. After filing the grounds of appeal or reply, any amendment to a party's case may be admitted and considered at the Board's discretion, which is set out in Article 13(1) RPBA, such discretion being exercised *inter alia* in view of the need for procedural economy. As is established case law of the Boards of Appeal, such procedural economy implies that amended requests should at least be *prima facie* allowable in order to be admitted.

3.1.2 The appellant filed the auxiliary request during oral proceedings. The request thus represented a change to the appellant's complete case as defined in Article 12(2) RPBA and its admittance is to be considered at the Board's discretion under Article 13(1) RPBA.

3.1.3 With claim 11 as filed having been found not to provide a basis for claim 1 of the main request, the appellant relied on paras. [0006], [0011], [0016] and Figures 1a and 1b in combination with claim 1 as filed to provide the basis for the subject-matter of claim 1.

3.1.4 As regards para. [0016], this is directed to the embodiment in which the sensor means is an optical sensor. Claim 1 is however limited to the embodiment in which the sensed characteristic feature of the rope is the electrical contact of at least one of the rope strands with a member contacting the sheath surface of

the rope. It thus follows that, being directed to an embodiment outside the scope the claim, para. [0016] cannot provide any basis for the features in claim 1. Although the appellant argued that it provided a basis for the term 'sensing' as used in claim 1, this is however irrelevant to the issue of the sensing which claim 1 involves, namely via electrical contact.

3.1.5 As regards para. [0011], this also fails to provide a basis for the subject-matter of claim 1 at least due to the drive sheave (10), or similar feature in contact with the suspension rope, being described as 'grounded' *inter alia* in lines 19, 21 and 25 of col. 4, which attribute of the member 10 is however not defined in claim 1. Claim 1 indicates only that the member 10 is electrically conductive, yet this is not functionally or structurally the same thing as being grounded. In omitting this feature from claim 1, an unallowable intermediate generalisation of the disclosure given in the application as filed has occurred, such that the subject-matter of claim 1 extends beyond the content of the application as originally filed contrary to the requirement of Article 123(2) EPC.

3.1.6 The reference to para. [0006] also fails to provide a basis for the claimed subject-matter. In col. 2, lines 45 to 54, the claimed embodiment comprising sensor means based on electrical conductivity is described, however notably again in combination with a 'grounded object such as a drive sheave or an idler sheave'. The subject-matter of claim 1 fails to include the 'grounded' nature of the member 10 disclosed in the referenced passage as a part of the wear detector such that, in terms of the alleged basis being found in this passage, the omission of the feature 'grounded' results

in subject-matter which contravenes Article 123(2) EPC.

- 3.1.7 As regards the appellant's further contention that Figs. 1a and 1b provided a basis, it is noted that these figures both depict a grounded member 10, which is described in the description of these figures in paras. [0010] and [0011]. Thus, contrary to the opinion of the appellant, the disclosure in these figures also does not provide a direct and unambiguous basis for the subject-matter of claim 1, at least due to the feature 'grounded' having been omitted from claim 1 in relation to the member 10.
- 3.1.8 The appellant failed to provide a *prima facie* direct and unambiguous basis for the subject-matter of claim 1. The Board is also unable to immediately see any such basis. The subject-matter of claim 1 thus at least *prima facie* fails to meet the requirement of Article 123(2) EPC.
- 3.1.9 Therefore, the subject-matter of claim 1 is at least not *prima facie* allowable, which would be necessary for fulfilling the need for procedural economy and consequently admitting the request into the proceedings. Accordingly, the Board exercised its discretion under Article 13(1) RPBA not to admit this request.

**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