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D E C I S I O N
of 20 May 1994

Case Number: T 0758/92 - 3.2.1

Application Number: 85114751.2

Publication Number: 0195850

IPC: F16F 15/00

Language of the proceedings: EN

Title of invention:
Active vibration isolation system

Applicant:
Barry Wright Corporation

Opponent:
-

Headword:
-

Relevant legal norms:
EPC Art. 84, 123(2)
EPC R. 88

Keyword:
"Amendments - deletion of feature (allowed)"

Decisions cited:
-

Catchword:
-

Case Number: T 0758/92 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 20 May 1994

Appellant: Barry Wright Corporation
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Decision under appeal: Decision of the Examining Division of the European Patent Office dated 26 February 1992 and posted 27 March 1992, refusing European patent application No. 85 114 751.2 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: F.A. Gumbel
Members: F.J. Pröls
J.C.M. de Preter

Summary of Facts and Submissions

- I. European patent application No. 85 114 751.2, filed on 21 November 1985, was refused by a decision of the Examining Division taken at the oral proceedings on 26 February 1992 and issued in written form on 27 March 1992.

- II. The reason for the refusal was that the documents of both the main and the subsidiary request did not meet the requirements of Article 123(2) EPC. In this respect it was in particular pointed out that in Claim 1 the deletion of the feature "relative to said base" was not supported by the content of the application as originally filed, since this feature had always been represented as essential for the invention. Furthermore the decision indicated that the arguments forwarded by the applicant only related to the preferred embodiment of the deriving means being a geophone and that nothing supported the fact that the motion of the mass derived from that geophone was in no way related to the base. In the decision under appeal objection was also made to further passages in the dependent claims and the description as offending the requirements of Article 123(2) EPC.

- III. A notice of appeal was filed against this decision on 5 June 1992 and the appeal fee was paid on the same day. The Statement of Grounds of appeal was filed on 6 August 1992.

- IV. The Appellant argued that the feature "relative to said base" has been removed from the claims in order to correctly define the invention as originally filed. The

claims erroneously including this feature define an inoperative system which is incapable of functioning in the manner described. All suitable "deriving means" which could conceivably function must of necessity measure only the absolute motion of the mass and not the motion of the mass relative to the system support.

V. On 18 November 1993, during a personal consultation with the Rapporteur of the Board, the Appellant announced that amendments would be made in the application documents as discussed. With letters of 22 November 1993 and 5 January 1994 several replacement pages for the claims and description were filed and the Appellant requested the grant of a patent on the basis of the following documents:

Claims:

1-9, 13-16, 17 (partly), 28-30	received 22 October 1991 with letter of 22 October 1991,
10-12, 22, 23, 24 (partly),	received 24 November 1993 with letter of 22 November 1993,
17 (partly), 18-21, 24 (partly), 25-27,	received 7 January 1994 with letter of 5 January 1994;

Description:

pages 1-9, 11-20	received 22 October 1991 with letter of 22 October 1991,
pages 10, 21-23	received 24 November 1993 with letter of 22 November 1993;

Drawings:

sheets 1/4 to 4/4 received 22 October 1991
with letter of 22 October
1991.

A further amendment to Claim 4 was agreed over
telephone on 2 May 1994.

VI. Current Claim 1 reads as follows:

"An active vibration isolation system comprising:

a payload mass (11) supported relative to a base (12)
so as to be subject

to vibration motion and to respond to application of
actuation force opposing said motion,

means (21) for deriving a motion signal representative
of the motion of said mass (11),

force transducer (23) for applying force to said mass
(11) opposed to the direction of said motion adequate
to substantially cancel said motion in response to an
applied control signal and

circuit means (22) responsive to said motion signal for
producing said control signal

C H A R A C T E R I Z E D I N T H A T

said deriving means (21) derives a velocity signal
representing the velocity of said mass (11) and

said circuit means (22) produces said control signal with a transfer function which has a gain of substantially zero at zero frequency and high gain greater than unity at the frequencies of said vibration except that the gain is substantially less than unity for all frequencies at open loop phase angles of $\pm 180^\circ$."

Dependent Claims 2 to 30 relate to further embodiments of the system according to Claim 1.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC; it is admissible.
2. *Amendments, deletion of subject-matter in Claim 1 (Article 123(2) EPC)*
 - 2.1 Present Claim 1 differs from original Claim 1 (received 21 November 1985) in the sense that
 - (a) it contains **reference numerals**,
 - (b) it has been redrafted in the two-part form including a precharacterising and a characterising part, whereby the terms "**motion**" and "**motion signal**" in the precharacterising part of Claim 1 have replaced the original terms "**velocity**" and "**velocity signal**", however, by the addition of the sentence "**said deriving means (21) derives a velocity signal representing the velocity of said**

mass (11)" in the characterising part of the claim, the overall content of the claim has not been changed so far,

- (c) the term "**force transducer**" has replaced the original term "**actuator means**",
- (d) the wording "**relative to said base (12)**" in the sentence "**means (21) for deriving a motion signal representative of the motion of said mass (11) relative to said base (12)**" has been deleted.

2.2 The amendments under (a) and (b) obviously do not change the content of Claim 1. The amendment (c) is supported by the original description where the term "**force transducer**" is also used for the term "actuator means for applying force" present in original Claim 1, see the original description, e.g. page 5, line 13 or page 14, line 8 or page 25, paragraph 2, line 3/4.

2.3 Thus, leaving aside the amendments (a) to (c) made merely for the purposes of delimitation and greater accuracy, Claim 1 as it stood when the application was refused and as it still stands, corresponds to its original text except that the original Claim 1 contains the further feature "relative to said base" deleted in the current Claim 1 according to the amendment (d). The omission of this feature was considered by the Examining Division as an inadmissible amendment to the documents and thus a contravention of Article 123(2) EPC.

2.4 In Decision T 514/88 (OJ EPO 1992, 570) a detailed analysis is made of several earlier decisions

concerning the question of whether amendment by omission or deletion of a feature can lead to an objectionable addition of subject-matter under Article 100(c) or 123(2) EPC. In particular the various "tests" and auxiliary criteria that are suggested as appropriate tools for analysing specific cases, such as "essentiality" (Decision T 260/85, OJ EPO 1989, 105), "inessentiality" (Decision T 331/87, OJ EPO 1991, 22), the "novelty test" (Decision T 201/83, OJ EPO 1984, 481, point 3) and the "novelty test applied to generalisations" (Decision T 194/84, OJ EPO 1990, 59) are compared and contrasted. As stated in its earlier Decision T 527/88 of 11 December 1990 (unpublished) and T 64/91 of 28 October 1992 (unpublished), this Board concurs with the conclusion reached in T 514/88 that the above considerations are not necessarily contradictory but in fact can be subsumed under the common principle that the subject-matter of an amended application or of a granted patent must be directly and unambiguously derivable from, and consistent with, the original disclosure. The basis for the amendment need not be presented in express terms in the original disclosure but it must be sufficiently clear to a person skilled in the art to be directly and unambiguously recognisable as such and not of a vague and general character.

- 2.5 The original documents, particularly the description, page 6, last paragraph to page 8 and the following pages with the formulas; page 23, paragraphs 1 and 2, and the drawings, Figures 1 and 5, 6, all clearly show that the "means for deriving a velocity signal representative of the velocity of said mass" are preferably velocity sensors 21 (Figure 1) or 64 to 69

(Figure 5) in the form of velocity sensitive geophones. According to the description page 7, last paragraph, the

"velocity sensitive geophones measure the **relative velocity** between the **unit base** or case of the **sensor** and a suspended **mass** called the **proof mass**. The sensor consists of a coil of wire containing many turns of very fine wire suspended on very linear and compliant springs within a magnetic field provided by a core and permanent magnet assembly. The motion to be measured is the velocity of the payload 11."

Thus, Figures 1 and 5 and their description disclose that the **base** or case of the geophone 21 (or 64 to 69) is **mounted** on the **payload mass** M, 11 (or table work surface 61) and the output signal of the geophone is proportional to the relative velocity between the **proof mass** and the **payload mass** 11 (or 64 to 69) on which the base or case of the geophone is mounted. Thus, a skilled person can clearly and unambiguously recognise from this disclosure in the original documents that the "means (21) deriving a velocity signal" (i.e. preferably the geophone) produce a signal which defines the velocity of the payload mass 11 relative to the "proof mass" suspending the **geophone base** or case and **not** the velocity of the payload mass relative to the **base 12 of the support structure**.

There is no indication in the original documents, except in the original Claim 1, that the velocity sensors measure the relative velocity between the payload 11 and the base 12 of the support structure.

Thus, the feature "relative to said base (12)", which has been deleted in current Claim 1, was clearly inconsistent with the teaching of the other documents of the application and there was a clear basis in the original disclosure for the deletion of the respective feature.

- 2.6 Concerning the argument in the decision under appeal, that the feature of Claim 1 concerned by the deletion is not limited to geophones but covers any means for deriving a motion of the mass 11, and that even if it were clear that, when the deriving means consists of a geophone, the sensed velocity was absolute, the deletion could not be regarded as obvious when any other suitable "deriving means" is concerned, it is to be noted that this argument relates to an amendment under Rule 88 EPC rather than to an amendment under Article 123(2) EPC.

The Board is aware that the original and also the present Claim 1 do not restrict the claimed system to the use of a geophone as a deriving means. However, in the original claim set, Claim 3 (= present Claim 4) as appended to Claim 1 is concerned with a geophone which is used as a deriving means. Thus, considering the functioning of the geophone as defined by the description, particularly pages 7 and 8, and the drawings (Figures 1 and 5), the definition of the velocity signal in Claim 1 is contradictory to the functioning of a geophone.

For the reasons set out above the Board is satisfied that a skilled reader of the original application documents would even have realised the wording

"relative to said base (12)" in Claim 1 as an error under Rule 88 EPC, since a geophone mounted on the payload, as described must necessarily produce a signal representing the **absolute** velocity of the payload and not its velocity relative to the base of the support.

In the given circumstances the deletion of the words "relative to said base (12)" in Claim 1 is considered admissible and indeed necessary in respect of Article 84 EPC. The subject-matter of current amended Claim 1, therefore, cannot be objected to for reasons of Article 123(2) EPC.

3. *Extension of subject-matter, dependent claims
(Article 123(2) EPC)*

3.1 Current dependent Claim 4 concerns structural features of a geophone. During the appeal procedure the wording of this claim has been made consistent with the teaching of the original description page 7, last paragraph and page 8, first paragraph and the original wording "said base" in line 5 of corresponding original Claim 3 has been replaced by "the geophone case".

3.2 Considering the further dependent Claims 2, 3 and 5 to 23 not objected to by the decision under appeal the Board sees no reason to challenge the admissibility of these claims which have been repeatedly amended and multiplied in comparison to the content and number of the original claims.

3.3 Dependent Claims 24 to 30 have been objected to by the Examining Division as offending the requirements of Article 123(2) EPC, since their teaching has

generalised the original disclosure of the specific solution according to Figure 10 by using the general technical term "pneumatic **means**" in Claims 24 and 25.

Claim 24 has been amended during the appeal procedure in the sense that its teaching is now limited to "pneumatic means (103, 104) connected to said piston (102) freely suspended from diaphragms (103)" as disclosed in the original documents (Figure 10 and its description). Thus this claim and also the following Claims 25 to 30 as appendent to Claim 24 have been brought into agreement with the original disclosure.

Hence, the current dependent Claims 2 to 30 do not contravene Article 123(2) EPC.

4. *Extension of subject-matter, description*
(Article 123(2) EPC)

- 4.1 The inclusion of the wording "between the geophone case and the geophone coil (proof mass)" on page 6, line 37 of the present description is admissible for the reasons set out under points 2.5 and 2.6 above.

The amendment objected to on page 10, line 28 of the description has been cancelled so that the text on this line again corresponds with the original text on page 11, line 21 of the original description.

As concerns the other amendments carried out during the examining procedure in the description and the drawings the Board has no objections either.

5. For the foregoing reasons it is considered that the present documents as listed under point V fulfil the requirements of Article 123(2) EPC.

6. Having regard to the fact that the reasons for the impugned decision referred only to the question of extension of subject-matter under Article 123(2) EPC and to the applicability of Rule 88 EPC, the Board considers it appropriate to make use of the power conferred by Article 111(1) EPC to remit the case to the first instance for further prosecution with the order to examine whether the application corresponds to the further requirements of the EPC.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance for further prosecution.

The Registrar:

The Chairman:

S. Fabiani

F. Gumbel