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**Datasheet for the decision  
of 9 August 2022**

**Case Number:** T 0390/20 - 3.2.08

**Application Number:** 14734196.0

**Publication Number:** 3004682

**IPC:** F16F7/116, F16F7/14

**Language of the proceedings:** EN

**Title of invention:**

SELF-TUNED MASS DAMPER AND SYSTEM COMPRISING THE SAME

**Applicant:**

Teknologian tutkimuskeskus VTT Oy

**Headword:**

**Relevant legal provisions:**

EPC Art. 123(2), 56, 113(1)  
RPBA 2020 Art. 13(2)

**Keyword:**

Amendments - allowable (yes)  
Inventive step - (yes)  
Right to be heard - examination procedure  
Amendment after summons - taken into account (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 0390/20 - 3.2.08

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.08**  
**of 9 August 2022**

**Appellant:** Teknologian tutkimuskeskus VTT Oy  
(Applicant) Vuorimiehentie 3  
02150 Espoo (FI)

**Representative:** Laine IP Oy  
Porkkalankatu 24  
00180 Helsinki (FI)

**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 23 August 2019  
refusing European patent application No.  
14734196.0 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairwoman** P. Acton  
**Members:** M. Foulger  
Y. Podbielski

## **Summary of Facts and Submissions**

- I. With the decision posted on 23 August 2019 the examining division refused the European patent application No. 14734196.0. They found that the subject-matter of claim 1 according to the main request and auxiliary requests 1 - 3 lacked an inventive step over D1 (DE 10 2004 029 792 A1) combined with the knowledge of the skilled person.
- II. Oral proceedings took place before the Board on 9 August 2022.
- III. At the end of the oral proceedings, the appellant requested:
- reimbursement of the appeal fee and remittal to the examining division,
  - the grant of a patent based on auxiliary request A1 (main request).
- IV. Claim 1 of auxiliary request A1 reads:
- "A tuned mass damper (100) comprising :
- an auxiliary mass (120) and
  - a wire rope isolator as a non- linear suspension (110) which is configured to connect the auxiliary mass (120) to a vibrating structure (200),
- wherein the mass of the auxiliary mass (120) and the stiffness of the non-linear suspension (110) are configured to yield an appropriate natural frequency for the resulting structure,
- characterized in that said mass of the auxiliary mass (120) and the stiffness of the non-linear suspension (110) are selected such that:

- said natural frequency is at least 6 Hz and that  
- the amplitude of the relative displacement of the  
auxiliary mass (120) in respect to the vibrating  
structure (200) is at most 12 mm,  
~~wherein the mass damper (100) is self-tuned."~~

(modifications with respect to the claim as originally  
filed are struck-through)

V. The following documents are referred to in this  
decision:

D1: DE 10 2004 029 792 A1

D4: US 4,694,650 A

VI. The appellant essentially argued the following:

a) Reimbursement of the appeal fee and remittal to the  
examining division

The examining division had presented their arguments in  
a piecemeal manner which meant that the appellant had  
difficulty in understanding them.

b) Added subject-matter

The deletion of the feature "the damper is self-tuned"  
did not add subject-matter which went beyond that of  
the application as originally filed.

c) Inventive step

D1 disclosed a tuned mass damper according to the  
preamble of claim 1.

The claimed parameters led to a damper which had the

surprising technical effect of having a broadened frequency band (see application, p. 2, l. 13 - 15).

There was no hint in the cited state of the art that would have allowed the skilled person to arrive at the subject-matter of claim 1.

The subject-matter of claim 1 therefore involved an inventive step.

### **Reasons for the Decision**

#### 1. Article 113(1) EPC - Right to be heard

According to Article 113(1) EPC, decisions of the EPO may only be based on grounds or evidence on which the parties concerned have had an opportunity to present their comments. The appellant objected that they were "ambushed" by an objection under Article 83 EPC which had been substantiated by the examination division for the first time during oral proceedings. However, the impugned decision is based solely on Article 56 EPC. Therefore, any further objections raised during oral proceedings are irrelevant for the assessment of whether the right to be heard was given to the appellant and do not lead to an infringement of Article 113(1) EPC.

To the extent that the examination division did not acknowledge a technical effect as part of its reasoning on inventive step, the Board notes that this cannot be seen as unexpected in view of the content of the examination division's communication dated 20 December 2018. In that communication the objective technical problem had been formulated in much the same way as in the decision. In any event, it appears from the minutes

that the issue of inventive step starting from document D1, including the technical effect of the distinguishing features, had been discussed during the oral proceedings, and that the appellant had nothing to add on that topic after an interruption of the proceedings. Moreover, it does not appear from the minutes that the appellant was prevented from filing further auxiliary requests (see grounds of appeal, p. 8) as according to the minutes of the oral proceedings (see paragraphs 5.2, 7.4, 9.6, 13) the appellant filed three new requests during the oral proceedings and this was "the most limitate they can provide" (paragraph 13.3).

The appellant also criticised that the examining division failed to substantiate in the decision why selecting the novel design parameters for a mass damper for a circuit board would be obvious. However, the examining division relied on the skilled person's common general knowledge and reasoned why it did not follow the appellant's argument on this point (see points 1.1.6 and 1.4 of the decision).

In view of the above, there was no violation of Article 113(1) EPC and the request for reimbursement of the appeal fee is refused.

Finally, as the appellant's main request (i.e. auxiliary request A1) is allowable, remittal to the examining division is in any event not necessary.

2. Admittance of auxiliary request A1 into the proceedings

The auxiliary request was filed during oral proceedings, its admission is thus subject to Article 114(1) EPC and Article 13(2) RPBA 2020.

In the current case, the new request was a reaction to and clearly overcame the objection under Article 83 EPC raised for the first time by the Board in its communication under Article 15(1) RPBA. This can be regarded as a special reason in the sense of Article 13(2) RPBA 2020. Auxiliary request A1 was thus admitted into the proceedings.

3. Article 123(2) EPC

Claim 1 of the request is based on claims 1, 3 and 10 as originally filed. The appellant has however deleted the feature A "wherein the mass damper (100) is self-tuned" from the original claim 1.

It is established case law that amendments can only be made within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing from the whole of the application as filed, see Case Law of the Boards of Appeal, 9th edition, 2019, II.E.1.3.1.

The damper disclosed in the application comprises a wire rope isolator and a mass. It is thus clearly a passive device which is not self-tuned, rather the parameters are fixed and cannot be adjusted. The claimed parameters lead to the effect presented in the application that the damper can damp different frequencies, thus the deletion of feature A does not introduce subject-matter which goes beyond that of the application as originally filed.



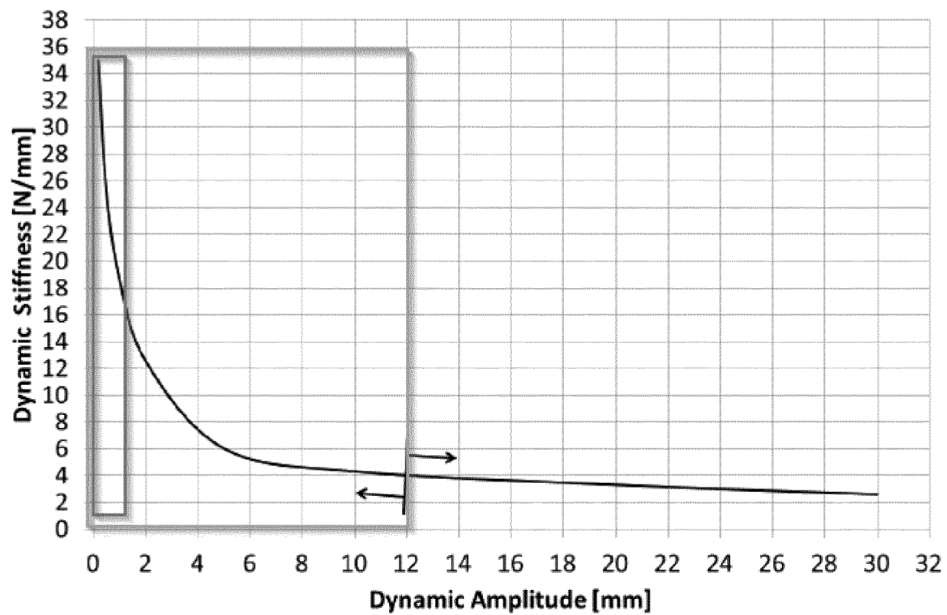
4. Inventive step - Article 56 EPC

The damper according to D1 is the closest prior art and discloses features of the preamble of claim 1.

The subject-matter of claim 1 differs from this known tuned damper in that:

- the natural frequency is at least 6 Hz and that
- the amplitude of the relative displacement of the auxiliary mass in respect of the vibrating structure is at most 1 mm.

Whilst in general the selection of parameters is considered to be something the skilled person would do without the exercise of inventive activity (cf. impugned decision, paragraph 1.1.4), in the current case the claimed features lead to a surprising technical effect of being able to dampen a broad range of frequencies. The small amplitudes of the claimed device mean that the device operates in the left side of the graph shown in Fig. 14 of the application (see smaller box in the graph below) and thus in a range of amplitudes which is counter-intuitive for the skilled person who would seek to use larger amplitudes in the linear part of the characteristic curve.



Also, the cited state of the art would not lead the skilled person to the claimed solution. D4 does not disclose an amplitude of 1 mm but rather cites as an example, see col. 6, l. 54 - 56, an amplitude of 7.6 mm (0.3 inches) and, moreover, relates to a different type of damper.

Thus, the skilled person starting from D1 as closest prior art would not have arrived at the subject-matter of claim 1 either in view of the cited prior art or their own common general knowledge. The subject-matter of claim 1 therefore involves an inventive step.

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the examining division with the order to grant a patent in the following version:
  - Claims 1-7 of auxiliary request A1 filed during the oral proceedings before the Board on 9 August 2022,
  - Description: pages 1-2 filed during the oral proceedings before the Board on 9 August 2022 and pages 3-9 of the published application,
  - Figures 1-14 of the published application.

The Registrar:

The Chairwoman:



C. Moser

P. Acton

Decision electronically authenticated