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**Datasheet for the decision
of 25 July 2023**

Case Number: T 0438/21 - 3.2.08

Application Number: 14165257.8

Publication Number: 2757283

IPC: F16F15/134, F16D13/64,
F16H45/02, F16F15/123

Language of the proceedings: EN

Title of invention:
Damper device

Patent Proprietor:
AISIN AW CO., LTD.

Opponent:
Valeo Embrayages

Headword:

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
Novelty - (yes)
Inventive step - main request (yes)

Decisions cited:

Catchword:



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Case Number: T 0438/21 - 3.2.08

D E C I S I O N
of Technical Board of Appeal 3.2.08
of 25 July 2023

Appellant: Valeo Embrayages
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 26 February
2021 rejecting the opposition filed against
European patent No. 2757283 pursuant to Article
101(2) EPC.**

Composition of the Board:

Chairwoman P. Acton
Members: M. Foulger
C. Schmidt

Summary of Facts and Submissions

- I. The opponent filed an appeal against the decision posted on 26 February 2021, whereby the opposition division rejected the opposition against the European patent No. 2 757 283. They found that the subject-matter of claim 1 was new and inventive over the prior art in the proceedings.
- II. Oral proceedings took place before the Board on 25 July 2023.
- III. The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.
- IV. The respondent (patent proprietor) requested that the appeal be dismissed, i.e. that the patent is maintained as granted (main request) or, in the alternative, on the basis of one of the auxiliary requests 1 to 12, all filed with the reply to the grounds of appeal dated 12 November 2021.
- V. The following documents have been discussed in the appeal proceedings:

D9: DE 20 2010 012 465 U1
D10: WO 2010/079273 A1
- VI. Claim 1 as granted reads as follows:

"A damper device (10) that includes:
(a) an input element (11) which transmits power from a motor to a first elastic body (SP1); the first elastic body which transmits power from the input element to a

first intermediate element (12);

(b) the first intermediate element which transmits power from the first elastic body to a second elastic body (SP2);

(c) the second elastic body which transmits power from the first intermediate element to a second intermediate element (14); the second intermediate element (14) which transmits power from the second elastic body (SP2) to a third elastic body (SP3);

(d) the third elastic body (SP3) which transmits power from the second intermediate element (14) to an output element (15);

(e) and the output element (15) to which power is transmitted from the third elastic body (SP3), the damper device(10) characterized in that

(f) the first and second elastic bodies (SP1, SP2) are coil springs, and

(g) the third elastic body (SP3) is an arc spring

(h) that is arranged radially inward of the first and second elastic bodies (SP1, SP2)."

Feature references added in bold by the Board.

VII. The appellant essentially argued the following:

The subject-matter of claim 1 was neither new nor involved an inventive step in the light of the embodiments shown in Figs. 3 and 5 of D10 or Fig. 3 of D9. In particular, the term "arc spring" had to be interpreted broadly because the term was merely defined in the dependent claims and this definition had to be regarded as optional.

VIII. The respondent essentially argued the following:

D10 did not disclose an arc spring as the third elastic body. In both the embodiments of Figs. 3 and 5, the arc spring was at the input side of the damping device and was therefore the first elastic body. Thus, feature (g) was not known from either of the embodiments of D10. The combination of these two embodiments would also not lead to the subject-matter of claim 1.

D9 did not disclose an arc spring. Feature (g) was therefore not known from this document.

As neither of the cited documents showed feature (g), a combination of their teachings also did not lead to the subject-matter of claim 1.

The subject-matter of claim 1 was thus new and involved an inventive step.

Reasons for the Decision

1. D10 as closest prior art

1.1 D10, embodiment of Figs. 1 - 3 discloses:

A damper device **(10)** that includes:

(a) an input element **(12)** which transmits power from a motor to a first elastic body **(34)**; the first elastic body which transmits power from the input element to a first intermediate element **(36)**;

(b) the first intermediate element **(36)** which transmits power from the first elastic body **(34)** to a second elastic body **(Fig. 4, left spring 46 between intermediate bodies 36 and 50)**;

- (c) the second elastic body which transmits power from the first intermediate element (36) to a second intermediate element (50); the second intermediate element which transmits (50) power from the second elastic body (46 left) to a third elastic body (see Figs. 1 - 3 as well as Fig. 4, right spring 46 between the intermediate body 50 and the output element 14);
- (d) the third elastic body (46 right) which transmits power from the second intermediate element (50) to an output element (14);
- (e) and the output element (14) to which power is transmitted from the third elastic body (46 right), wherein
- (f) the first (34) and second (46 left) elastic bodies are coil springs (see Fig. 1)
- (g) the third elastic body (46 right) is a arc spring

The only arc spring shown in Figures 1 to 3 and 4 is the first elastic body (34), i.e. that spring which is linked to the damper's input element which receives power from the motor. Therefore, feature (g) whereby the third elastic body (i.e. that spring which transmits power to the output element) is an arc spring is not known from D10, embodiment of Figs 1 - 3.

- 1.2 D10, Fig. 5 shows another embodiment wherein the arc spring 34 is arranged radially inward of the second and third elastic bodies - straight springs 46 (see p. 17, l. 10 - 12). As shown in the schematic representation of the damper device of Fig. 4 the springs 34 are at the input side of the device. Moreover, throughout D10 the arc springs 34 are consistently described as being at the inlet side. Therefore, the embodiment disclosed in Fig. 5 also does not disclose feature (g).

Thus, even if - as suggested by the appellant - the

skilled person were to combine the teachings of the two embodiments, they would not arrive at the subject-matter of claim 1 because feature (g) would not be realised by this combination.

- 1.3 Moreover, the appellant suggested that the skilled person would modify the arrangement of Fig. 3 and arrange the arc springs radially inward of the second and third second elastic bodies in order to reduce centrifugal forces on the arc spring and to avoid problems with hysteresis.

The Board considers however that such an arrangement is already shown in Fig. 5 of D10. The obvious solution for the skilled person, if centrifugal forces were really a problem, would be to take the "ready-made" solution of D10 Fig. 5. As discussed above this would not lead to the claimed solution. This argument is therefore not persuasive.

2. D9 as closest prior art

- 2.1 Definition of "arc spring"

The patent in paragraph [0018] defines an arc spring as having an axis extending in a circular arc shape when no load is applied. The Board is persuaded that this is how the skilled person would interpret the term, in particular that the spring is curved when it is under no constraint either through external load or due to its installation.

The appellant argued that the above definition of an "arc spring" was only given in the dependent claims 9 and 10. As dependent claims concern preferable, i.e. optional, aspects of the invention, this meant that

claim 1 was broader in scope.

The argument that claim 1 should be interpreted broadly because of the dependent claims is not persuasive; in addition to the definition of "arc spring", the dependent claims contain more information, e.g. concerning the spring material. Thus, they are in any case more restrictive than independent claim 1. The fact that they also include the definition of arc spring does not mean that this definition can be simply ignored or regarded as optional in claim 1.

The Board is thus persuaded that an arc spring has an axis which extends in a circular arc shape when no load is applied (as stated in paragraph [0018] of the patent), i.e. that when removed and lying in an unconstrained state, the spring would still be curved.

2.2 Disclosure of D9

The appellant argued that the radially inner springs 118 shown in Fig. 3 of D9 were curved and that the arrangement was in an unloaded condition. These springs were therefore to be considered as arc springs.

Given the definition of an arc spring accepted by the Board above, it is not sufficient for a spring to extend along a circular arc when the damper device is in an unloaded condition to qualify as an arc spring. It must extend along an arc when in the unconstrained state, i.e. when removed from the damper device.

The Board considers that there is nothing in D9 that indicates that these springs would not when removed, i.e. unloaded, revert to a straight condition, nor did

the appellant suggest this was the case.

Hence, feature (g) is not known from D9 and the subject-matter of claim 1 is consequently new with respect to D9.

Moreover, as in both D9 and D10 the feature (g) is not disclosed, the combination of the teachings of these documents does not lead to the subject-matter of claim 1. Therefore, taking into account the disclosures of D9 and D10, the subject-matter of claim 1 is new and involves an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairwoman:



C. Moser

P. Acton

Decision electronically authenticated