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Datasheet for the decision of 19 December 2006

Case Number: T 0313/04 - 3.2.01

Application Number: 95936144.5

Publication Number: 0787089

IPC: B62D 29/04

Language of the proceedings: EN

Title of invention:
Stress-bearing assembly

Patentee:
VOLVO CAR CORPORATION

Opponent:
DaimlerChrysler AG

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0313/04 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 19 December 2006

Appellant: (Patent Proprietor)
VOLVO CAR CORPORATION
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Representative:
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Respondents: (Opponent)
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Representative:
-

Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 16 December 2003 revoking European patent No. 0787089 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: S. Crane
Members: J. Osborne
G. Weiss

Summary of Facts and Submissions

I. The appeal is directed against the decision posted 16 December 2003 revoking European patent No. 0 787 089.

II. The opposition division found that the subject-matter of claims 1 according to the patent proprietor's requests was not disclosed in the application as originally filed (Article 123(2) EPC) or was not new or did not involve an inventive step in the light of the following state of the art:

D10: B. Waite *et al*, "BMW Z1 - Ein klassischer Roadster mit innovativen Kunststoffanwendungen", VDI-Reihe Kunststofftechnik, Kunststoffe im Fahrzeugbau - Technik und Wirtschaftlichkeit, 1988, 25-63.

The following state of the art introduced during the opposition procedure also played a role during appeal:

D4: SE-B-326 894 (& D4' US-A-3 415 568).

III. During oral proceedings held on 19 December 2006 the appellant's final, sole request was that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of a set of claims 1 to 12 presented during the oral proceedings. The respondent requested that the appeal be dismissed.

IV. Claim 1 according to the appellant's request reads:

"A stress-bearing assembly for use in a vehicle body (10), said assembly comprising a vehicle floor structure (12) made of a composite laminate resin-cured

structure made up of at least one pair of fibre mats (14, 16) separated by a layer of foamed plastics (18), said stress-bearing assembly further comprising a closed loop structure (20) attached to said composite structure (12) and oriented in a direction which is substantially transverse to the longitudinal extension of said vehicle body, said closed loop structure (20) is in the form of a generally inverted U-shaped hoop which is closed by a transversely extending bar or plate member (21), said closed loop structure (20) serving as a portion of a passenger cage of said vehicle body, which portion includes the A-posts of said vehicle body, characterized in that said stress-bearing assembly further comprises two closed loop structures (20) each in the form of a generally inverted U-shaped hoop which is closed by a transversely extending bar or plate member (21), each of said two closed loop structures (20) serving as a portion of a passenger cage of said vehicle body, said portions including the B-posts and C-posts of said vehicle body."

Claims 2 to 12 specify features additional to those of claim 1.

V. The respondent's submissions in as far as they are relevant to the present request may be summarised as follows:

The opposition division was correct in its finding in respect of the fourth auxiliary request considered during the former oral proceedings (page 8 of the decision). The closest prior art is a conventional saloon car in which the upper ends of the B-posts

normally are joined by a brace inside the roof panel. The problem is to reduce weight and the skilled person would learn from D10 that this problem may be solved by providing a composite sandwich floor. In so doing the skilled person would arrive at the subject-matter of claim 1.

VI. The appellant countered as follows:

Conventional saloon cars do not have a closed hoop comprising the B-posts and simply adding a composite floor would not lead to the subject-matter of claim 1. There is no evidence on the file regarding connection of the B-posts at the top and bottom in a conventional saloon car.

Reasons for the Decision

1. The subject-matter of claim 1 differs from that as granted essentially by the addition of the following features:

- that the stress-bearing assembly comprises a vehicle floor structure; and

- that the stress-bearing assembly comprises three of the closed loop structures which include the A-, B- and C- posts.

The board agrees with the respondent that no objections result from these additions.

2. The board and the respondent are also in agreement that the subject-matter of claim 1 is novel with respect to the available prior art and there remains only the matter of inventive step.

3. The patent relates to a stress-bearing assembly comprising the combination of a vehicle floor structure manufactured as a sandwich composite and transversely extending closed loop structures which include the A-, B- and C-posts. The closed loop structures are in the form of inverted U-shaped hoops closed by a transversely extending bar or plate member. The respondent sees the subject-matter of claim 1 as a modification of a conventional saloon car which would be obvious in the light of the teaching of D10.

3.1 The respondent produced no supporting evidence as regards the structure of a conventional saloon car but asserted that the B-post structure would form a closed loop structure within the meaning of the claim. The board can accept that a brace between the upper ends of the B-post pillars is common but even with such a brace the resulting inverted U-shaped hoop does not thereby become closed. The lower ends of the B-posts conventionally would be connected to the sills at the longitudinal edges of the floorpan. Moreover, the floorpan may include transverse stiffening sections. However, commonly only the floor itself would transversely connect the lower ends of the B-posts.

3.2 D10 relates to a project to employ plastics in a vehicle of the type commonly called a roadster, a two-seat open top car having only two doors. As far as the stress-bearing parts of the vehicle are concerned,

essentially the only change made from a wholly conventional construction is the replacement of the metal floor of the passenger compartment and associated transmission tunnel by a sandwich composite structure. The A-post structure, windscreen frame and front bulkhead all remain of a conventional metal construction and together form a closed loop within the meaning of the claim. However, since the vehicle is a roadster and no roll-over bar is provided there exists rearward of the windscreen no structure above the waistline and the B-posts therefore do not form part of a closed loop. Moreover, there is no disclosure of any connection between the lower ends of the B-posts other than that provided by the composite floor.

3.3 The teaching of D10 to the skilled person seeking to reduce the weight of the stress-bearing structure of a conventional saloon car would be limited to replacing the metal floor of the passenger compartment by a sandwich composite structure. Since the construction of the B- and C-post structures in D10 is conventional these would remain essentially unchanged in the saloon car and the features in claim 1 of a composite floor in addition to a closed loop structure including the B-posts would not be realised.

3.4 D4 discloses a complete vehicle floor produced as a sandwich composite construction and suggests that additional stress bearing structures such as a windscreen frame and "instrument frame compartment" (D4' column 2, lines 28 to 33) may be included. In a combination of this teaching with the disclosure of D10 the absence of any teaching as regards a closed loop structure including the B-posts would result in the

skilled person failing to arrive at the subject-matter of present claim 1.

3.5 The board concludes from the foregoing that the subject-matter of claim 1 involves an inventive step. Since claims 2 to 12 contain all features of claim 1 the same conclusion applies also to those claims.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to maintain the patent as amended on the basis of the following documents:

- claims 1 to 12 presented at the oral proceedings;
- amended description presented at the oral proceedings;
- drawings as granted.

The Registrar: The Chairman:

A. Vottner S. Crane