BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

A		B		C	X

File Number: T 0329/92 - 3.2.1

Application No.: 85 114 633.2

Publication No.: 0 182 337

Title of invention: A seat belt fitting

Classification: B60R 22/20

D E C I S I O N
of 29 April 1993

Proprietor of the patent: Autoliv Development Aktiebolag

Opponent: Autoflug GmbH & Co. Fahrzeugtechnik

Headword:

EPC Article 56

Keyword: "Inventive step (no)"

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 0329/92 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 29 April 1993

Appellant : (Proprietor of the patent)
Autoliv Development Aktiebolag
PO BOX 124
S - 44700 Vargarda (SE)

Representative :
Frankland, Nigel Howard
Forrester & Boehmert
Franz-Joseph-Straße 38
W - 8000 München 40 (DE)

Decision under appeal :
Decision of the Opposition Division of the European Patent Office given on 27 January 1992, and issued in writing on 12 February 1992, revoking European patent No. 0 182 337 pursuant to Article 102(1) EPC.

Composition of the Board :

Chairman : F.J. Pröls
Members : S. Crane
W.M. Schar

Summary of Facts and Submissions

I. European patent No. 0 182 337 was granted on 27 September 1989 on the basis of European patent application No. 85 114 633.2.

II. The patent was opposed on the grounds that its subject-matter lacked inventive step (Articles 100(a) and 56 EPC) with regard to the state of the art represented by the following documents:

(D1) DE-A-3 305 955
(D2) US-A-3 330 599
(D3) US-A-3 545 788
(D4) GB-A-1 355 652
(D5) US-A-2 635 282
(D6) US-A-2 956 795
(D7) US-A-3 042 742
(D8) US-A-3 822 874
(D9) GB-A-1 322 507.

III. By its decision given at oral proceedings on 27 January 1992, and issued in written form on 12 February 1992, the Opposition Division revoked the patent.

Claim 1 of the set of claims for the Contracting States DE, FR, GB as considered by the Opposition Division is worded as follows:

"A seat belt arrangement comprising a guide element (11) through which part of the seat belt passes, the guide element being mounted on a carriage (8) that is movable along a rail (1) or the like, the carriage being provided with means (9) to selectively retain or lock the carriage in a plurality of positions along said rail, means (15)

being provided to impart a bias to the carriage against any bias applied thereto by the seat belt, characterised in that said bias imparting means comprising a spring strip (15), one end (17) of which is connected to the carriage and the other end of which is wound into a spiral (18), the portion of the spring wound in a spiral being retained of (sic) a substantially predetermined position, the spring strip (15) providing a bias which is not dependant upon the position of the carriage (8)."

Dependent Claims 2 to 8 of this set relate to preferred embodiments of the seat belt arrangement claimed in Claim 1.

Claim 1 of the set of claims for the Contracting State IT reads as follows:

"A seat belt arrangement comprising a guide element (11) through which part of the seat belt passes, the guide element being mounted on a carriage (8) that is movable along a rail (1) or the like, the carriage being provided with means (9) to selectively retain or lock the carriage in a plurality of positions along said rail, means (15) being provided to impart a bias to the carriage against any bias applied thereto by the seat belt characterised in that said bias imparting means comprising a spring step (15), the opposed ends of which are respectively connected to the carriage (8) and one is retained at a substantially predetermined position, one end of the spring strip being wound into a spiral (18), the spring strip (15) providing a bias which is not dependant upon the position of the carriage (8)."

Dependent Claims 2 to 10 of this set relate to preferred embodiments of the seat belt arrangement according to Claim 1.

In its decision the Opposition Division argued that the use in a seat belt arrangement disclosed in document D1 of a constant force spirally wound spring such as disclosed, for example, in document D5 was obvious, particularly having regard to the teachings of document D2.

IV. The Appellants (Proprietors of the patent) filed a Notice of Appeal against this decision on 9 April 1992 and paid the appeal fee at the same time. The Statement of Grounds of Appeal was filed on 9 June 1992.

The Appellants requested that the decision of the Opposition Division be set aside and the patent be maintained in amended form on the basis of the documents considered by the Opposition Division. They also requested reimbursement of the appeal fee.

V. With a letter dated 17 July 1992, received on 20 July 1992, the Opponents stated that they withdrew their opposition.

VI. The Board issued a communication pursuant to Article 11(2) RPBA on 1 February 1993. In this communication the Board referred to the reference work "Mechanisms, Linkages and Mechanical Controls", McGraw-Hill, New York, 1965, page 210 (D10). The Board also indicated its provisional view that Claim 1 of the set of claims for Italy was objectionable under Article 123(2) EPC.

VII. Oral proceedings before the Board were held on 29 April 1993.

At the oral proceedings the Appellants withdrew their request for reimbursement of the appeal fee.

The arguments of the Appellants in support of their request for maintenance of the patent in amended form can be summarised as follows:

The skilled person would have had no reason to think that the proposal of document D1 to use a helical spring for counterbalancing the force applied to the carriage by the seat belt was not adequate and would not therefore have directed his attention to improving this aspect of the known seat belt arrangement. The process of making the present invention began with the recognition of the problems associated with the use of a helical spring, and this act of recognition should in itself, in the absence of any relevant clue or hint in the state of the art, be considered as contributing towards an inventive step.

Furthermore, there was nothing in the state of the art that could suggest replacing the helical spring by a constant force spirally wound spring of the type specified in the characterising clauses of the respective independent claims. Thus, document D2, which was particularly relied upon in this respect in the contested decision, related to a seat belt stowing device and not an adjustable height belt guide of the type claimed. In any case, there was no suggestion that the spiral spring shown in Figure 6 was arranged to apply a constant bias to the belt. Similar considerations applied to document D3. None of the documents D4 to D9 related in any way to seat belt arrangements and were concerned instead with counterbalancing window sashes or lamps or the like, or with self-winding tape measures. The relevant skilled person would have no cause to refer to such remote art when seeking a suitable spring for replacing the helical spring disclosed in document D1. It could be seen from the title of document D10, which had been referred to by the Board, that this work was not specifically concerned

with spring types and would therefore also be an unlikely source of information for the relevant skilled person.

The use of a constant force spirally wound spring ensured in a simple and space saving manner a properly effective counterbalancing of the belt tension and thus enabled the carriage carrying the belt guide element to be readily adjusted. The advantages of this arrangement had led to considerable commercial success with annual sales by the Appellants running into several million. Furthermore, the same arrangement had since been adopted by other manufacturers.

In view of these factors it was clear that the claimed seat belt arrangement involved the necessary scintilla of invention that was the prerequisite for a grant of a patent. It had to be remembered in the present case that the opposition had been withdrawn so that the Board were considering the issue solely in the public interest. In such circumstances if there were any doubt whatsoever about the correctness of the finding of lack of inventive step in the contested decision, the benefit of that doubt should be given to the Appellants and the decision set aside.

Adequate support for Claim 1 of the set of claims for IT could be found in independent Claim 9 of the original application, this claim covering both possible arrangements of the spring.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC; it is therefore admissible.

2. When, as here, the Opposition Division has revoked the patent the withdrawal of the opposition in the appeal proceedings has no direct procedural significance other than that the former Opponents are no longer considered as party to the proceedings as far as the substantive issues are concerned, see T 789/89, to be published. The Board has to evaluate the merits of the case of its own motion and can set the contested decision aside and maintain the patent only if the requirements of the EPC are met, see T 629/90, OJ EPO 1992, 654. The Board can find in the EPC no support for the - at least implicit - contention of the Appellants that in these circumstances it should apply a lower standard when evaluating inventive step than if the Opponents were still party to the proceedings.

3. The claimed invention is concerned with a seat belt arrangement in which the vertical position of the seat belt guide element located adjacent the shoulder of the passenger is adjustable. Such an arrangement is disclosed in document D1, on which the respective preambles of the independent claims of both sets of claims is based. According to this prior art a helical tension spring is attached at one end to the door post and at the other end to the movable carriage in order to balance the downward force on the carriage exerted on it by the seat belt. This is stated to facilitate the manual adjustment of the position of the carriage.

It is however apparent that the helical spring shown in document D1 could not in fact adequately perform the function which is ascribed to it since in the course of movement of the carriage, the length of the spring, and as a consequence thereof the force exerted by it on the carriage, changes considerably, whereas the force exerted by the seat belt, which the spring is intended to

balance, remains substantially constant. In the opinion of the Board the skilled man would have no difficulty in recognising the inadequacy of the helical spring proposed in document D1 either from a reading of the document itself or, at the latest, when he tries to put the teachings of the document into practical effect.

In the light of the above, the technical problem to be solved by the claimed invention is to be seen in the provision of a seat belt arrangement of the type disclosed in document D1 in which the carriage is substantially free of any residual bias over the whole range of its movement and is therefore easier to adjust than the prior art arrangement.

According to the claimed invention this problem is solved by using a biassing spring in the form of a spring strip one end of which is wound into a spiral, and which provides a bias which is not dependent upon the position of the carriage. According to Claim 1 of the set of claims for DE, FR and GB the portion of the spring wound in a spiral is retained at a substantially predetermined position and the other end is connected to the carriage. Claim 1 of the set of claims for IT also includes within its ambit the reverse arrangement of the two ends of the spring. As far as the essential function of the spring is concerned there is however no difference between the respective subject-matters of the two independent claims.

For the skilled person considering the technical problem stated above it is immediately apparent that the spring for biassing the carriage must be of a form which provides a bias substantially independent of the position of the carriage. It would in principle be possible to achieve this with a helical spring that was of such length that the relative change in its length on movement

of the carriage, and hence the change in the biassing force exerted by it on the carriage, would be comparatively small. This solution would however be difficult to put into effect given the limited space available in and limited height of the door post. The skilled person would therefore be forced to turn his attentions to other forms of spring which while being compatible with the limited confines in which he is working can nevertheless provide the required constant biassing force.

In document D10 reference is made to a spring comprising a strip of spring material which is prestressed, formed into a tight coil, and mounted on a freely rotating drum. The strip resists withdrawal from the coil with a force that remains constant throughout any extension. The spring, known under the trade name "Neg'ator", is stated to be widely used as a long-deflection spring to perform such functions as counterbalancing, constant-force tensioning and retracting.

In the light of this disclosure in a standard reference work it is apparent that constant force spirally wound springs of the configuration defined in the respective characterising clauses of the independent claims are well known in the art and must be considered as belonging to the common general knowledge of any mechanical engineer. This view is supported, for example, by the statement in document D4 (page 2, lines 2 to 13) that springs of this type are "well-known" and a similar reference to them in document D5 (column 1, lines 28 to 35). The use of such a spring in any situation where a substantially constant biassing force is seen as being desirable is therefore an option which is freely available to the skilled person and, moreover, in view of the small space requirements of these springs, an option which the skilled person would

have had a good reason to adopt in the particular circumstances of this case. Whether the spirally wound portion of the spring is attached to the door post or the carriage is a routine design choice which the skilled person will made according to the circumstances.

The Board therefore comes to the conclusion that the subject-matter of the respective independent claims is novel but lacks an inventive step (Article 56 EPC).

The Appellants have argued that the commercial success they have enjoyed in the production of seat belt arrangements according to the patent should support the view that an inventive step is indeed present. The Board cannot accept this since there is nothing in the affidavit evidence presented by the Appellants in this respect which could serve as showing that the high volume of sales was directly connected to the technical features of the seat belt arrangements specified in the claims. Nor could it be argued that the commercial success was as a result of meeting a long felt want, the closest state of the art, document D1, having been published little more than a year before the priority date of the contested patent. Again, the fact that other manufacturers may be producing corresponding seat belt arrangements to those claimed cannot in itself be seen as indicating that the claimed arrangements involve an inventive step, particularly as the Appellants have not demonstrated that this is as a direct result of the publication of their claimed invention.

4. In view of the above the question of the compliance of Claim 1 of the set of claims for IT with Article 123(2) EPC need not be decided.

5. As the Board is bound by the single request of the Appellants it is not necessary to consider the merits of the subject-matter of the dependent claims.

Order

For the above reasons, it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

S. Fabiani F. Pröls