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Datasheet for the decision of 7 October 2009

Case Number: T 2283/08 - 3.2.01

Application Number: 04010554.6

Publication Number: 1593559

IPC: B60R 22/195

Language of the proceedings: EN

Title of invention:
Seat belt restraint system

Applicant:
Ford Global Technologies, LLC

Opponent:
-

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step (Main Request) - no"
"Inventive step (First Auxiliary Request) - yes"

Decisions cited:
-

Catchword:
-

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Case Number: T 2283/08 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 7 October 2009

Appellant: Ford Global Technologies, LLC
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 8 May 2008 refusing European application No. 04010554.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: S. Crane
Members: H. Geuss
G. Weiss

Summary of Facts and Submissions

I. The appeal is directed against the decision posted 8 May 2008 refusing the European patent application No. 04 010 554.6.

II. The applicant requests that the decision under appeal be set aside and the patent granted on the basis of the main request (letter of 14 August 2009, via telefax) or on the basis of the first auxiliary request (claims filed on 14 August 2009, description and drawings filed on 1 September 2009 via telefax).

III. The following documents mentioned in the search report are in particular relevant:

(D1) US 2002/0089164 A1,
(D2) US 2002/0113425 A1.

IV. Claim 1 according to the main request reads as follows:

"A vehicle occupant restraint system comprising a lap belt (3) and a seat (2), wherein
the lap belt (3), or an extension of the lap belt (7), extends from two effective belt guides (4) located on each side of said seat (2), said effective belt guides being the utmost guide or anchor on each side of the seat (2) before the lap belt (3) or an extension of the lap belt (7) extends freely out for retaining [sic] the occupant (1), and wherein
the lap belt (3) emerges at the sides of the seat (2) at two effective side positions located on opposite sides of the seat (2),
such that the belt, when fastened around an occupant (1)

has a belt configuration defined by the at least two effective side positions (P), **characterised in** that

- said effective belt guides (4) are movable in a forward direction upon forward acceleration of the occupant in relation to the seat in a crash situation,
- so as to accomplish a forward displacement of the effective side positions (P) in relation to the seat (2) for altering the belt configuration from a crash restraint configuration to a ride down configuration."

V. Claim 1 according to the first auxiliary request reads as follows:

"A vehicle occupant restraint system comprising a lap belt (3) and a seat (2), wherein the lap belt (3), or an extension of the lap belt (7), extends from two effective belt guides (4) located on each side of said seat (2), said effective belt guides (4) being the utmost guide or anchor on each side of the seat (2) before the lap belt (3), or an extension (7) of the lap belt (3), extends freely out for restraining the occupant (1), and
the lap belt (3) emerges at the sides of the seat (2) at two effective side positions (P) located on opposite sides of the seat (2),
such that the lap belt (3), when fastened around an occupant (1) has a belt configuration defined by the [at] least two effective side positions (P), **characterised in** that

- said effective belt guides (4) are movable in a forward direction upon forward acceleration of the occupant in relation to the seat in a crash situation

- so as to accomplish a forward displacement of the effective side positions (P) in relation to the seat (2) for altering the belt configuration from a crash restraint configuration to a ride down configuration, **and in that the length of the lap belt (3), or the lap belt (3) and an extension (7) of the lap belt (3), extending freely between said effective belt guides (4) is kept constant during the forward movement of the belt guides (4) from the crash restraint configuration to the ride down configuration.**"

VI. The appellant's submissions as relevant to the present decision may be summarized as follows:

Document D1 is the closest prior art document and shows the features of the preamble of claim 1. The problem to be solved concerns diminishing load experienced by the restrained occupant during a crash (letter, 14 August 2009, page 5).

D2 teaches a lengthening of the belt to achieve a ride down configuration. Neither of the documents D1 or D2 suggests that the belt could be moved forwardly so as to obtain a ride down configuration. The present invention not only provides a limitation of the load but also avoids excessive slanting of the belt in a ride down configuration which would hold the risk that the belt slips up toward the abdomen during a crash. This is achieved by moving the belt guides forward, thereby moving the belt forward.

With respect to the first auxiliary request the supplementary feature (the length between said effective belt guides is kept constant) is contrary to the

teaching of D2 in which the belt is released and therefore altered in length.

Reasons for the Decision

Main Request

1. The subject-matter of claim 1 is obvious in view of the documents D1 and D2; thus claim 1 does not comply with Art. 56 EPC 1973.

1.1 Document D1 discloses all features of the preamble of claim 1:

A vehicle occupant restraint system comprising a lap belt and a seat (abstract, fig. 1),
wherein the lap belt , or an extension of the lap belt , extends from two effective belt guides located on each side of said seat (fig. 1, guide member 42),
said effective belt guides being the upmost guide or anchor on each side of the seat before the lap belt or an extension of the lap belt extends freely out for retaining the occupant (figs. 1 to 5, paragraph [0023]),
and wherein the lap belt emerges at the sides of the seat at two effective side positions located on opposite sides of the seat (do.),
such that the belt, when fastened around an occupant has a belt configuration defined by at least two effective side positions (do., paragraph [0026]).

1.2 The difference between D1 and the system according to claim 1 is that

- said effective belt guides (4) are movable in a forward direction upon forward acceleration of the occupant in relation to the seat in a crash situation,
- so as to accomplish a forward displacement of the effective side positions (P) in relation to the seat

(2) for altering the belt configuration from a crash restraint configuration to a ride down configuration.

1.3 The problem to be solved by the system according to claim 1 is to reduce deceleration forces on the passenger (load limiting function).

However, a belt tensioner with this purpose (load limiter) has been disclosed in D2. The belt guides (buckle or deflector) disclosed there move forward when the force acting on the seat belt exceeds a threshold value (D2, fig. 2 to 4). Therefore, after reaching the crash restraint configuration a forward displacement of the belt guides is foreseen so as to obtain a reduction on forces on the occupant.

It is obvious for a person skilled in the art to combine the teachings of documents D1 and D2 in order to arrive at the subject-matter of claim 1.

2. The applicant pointed out that the teaching of D2 is to lengthen the belt whereas the invention according to claim defines a forward movement of the belt guides.

The Board does not follow the argumentation of the applicant. According to paragraph [0012], last sentence, of document D2, the "… deflected end of the traction cable 24 may be connected with a belt engaging means …, e.g. a belt buckle or a belt deflector …". Therefore, upon activation of the tensioner, the buckle or the deflector will be released. Under the deceleration load of the occupant this release will cause the buckle and the deflector also to move forward when altering to the ride down configuration.

First Auxiliary Request

3. The subject-matter of claim 1 of the first auxiliary request is not obvious in the light of the state of the art according to D1 and D2.

3.1 The first auxiliary request differs from the main request in the last - bold printed feature - in the characterizing part of claim 1:
"… and in that the length of the lap belt (3) or the lap belt (3) and an extension (7) of the lap belt (3), extending freely between said effective belt guides (4) is kept constant during the forward movement of the belt guides (4) from the crash restraint configuration to the ride down configuration."

This feature is disclosed in the description, page4, lines 20-24, according to which it renders the construction simple.
Neither of the documents D1 or D2 contains any hint that there would be an advantage associated with keeping the belt length constant in the manner defined in the claim. The subject-matter of the claim cannot therefore be derived in an obvious manner from the state of the art and accordingly involves an inventive step, Art. 56 EPC 1973.

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 with the order to grant a patent on the basis of the following documents:

   - claims 1 to 9 (first auxiliary request) submitted via telefax on 14 August 2009;

   - description, pages 1 to 16 submitted via telefax on 1 September 2009;

   - Drawings, sheets 1/8 to 8/8 submitted via telefax on 1 September 2009.

The Registrar: The Chairman:

A. Vottner S. Crane