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**Datasheet for the decision  
of 8 April 2014**

**Case Number:** T 1990/09 - 3.2.01

**Application Number:** 06014708.9

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**IPC:** B60R21/231, // B60R21/00

**Language of the proceedings:** EN

**Title of invention:**  
Airbag and airbag system

**Applicant:**  
TAKATA CORPORATION

**Headword:**

**Relevant legal provisions:**  
EPC Art. 123(2)  
EPC 1973 Art. 56

**Keyword:**  
Amendments of application - allowable (yes)  
Inventive step - (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
Boards of Appeal  
Chambres de recours**

European Patent Office  
D-80298 MUNICH  
GERMANY  
Tel. +49 (0) 89 2399-0  
Fax +49 (0) 89 2399-4465

Case Number: T 1990/09 - 3.2.01

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.01**  
**of 8 April 2014**

**Appellant:** TAKATA CORPORATION  
(Applicant) 4-30, Roppongi 1-chome  
Minato-ku,  
Tokyo 106-8510 (JP)

**Representative:** Vossius & Partner  
Siebertstrasse 4  
81675 München (DE)

**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 6 April 2009  
refusing European patent application No.  
06014708.9 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman:** G. Pricolo  
**Members:** W. Marx  
S. Fernández de Córdoba

## Summary of Facts and Submissions

- I. On 15 June 2009 the appellant (applicant) lodged an appeal against the decision of the examining division posted on 6 April 2009 concerning the refusal of European patent application No. 06 014 708.9. The prescribed appeal fee was paid on the same day.
- II. The examining division considered that none of the requests on file met the requirements of Article 123(2) EPC. In a final remark, the examining division stated that it had doubts concerning novelty of the subject-matter of claim 1 according to the main request and the auxiliary requests 1 to 6 in view of document  
  
D1: US 2002/0017774,  
  
and also concerning inventive step when starting from the prior art cited in the application in view of the teaching of D1.
- III. With the statement setting out the grounds of appeal, received on 6 August 2009, the appellant maintained the Main Request and the Auxiliary Requests 1 to 4 and 6 and filed new Auxiliary Requests 5 and 7.
- IV. In its summons to oral proceedings posted on 29 January 2014, the board expressed the provisional opinion that claim 1 according to the Main Request and claim 1 according to Auxiliary Requests 1 to 6 did not meet, *inter alia*, the requirements of Article 123(2) EPC. Moreover, the board addressed deficiencies with regard to claim 1 according to Auxiliary Request 7 and the description and figures as filed.

- V. In reply to the preliminary opinion of the board, the appellant filed with letter dated 25 February 2014 a new set of claims based on the claims according to Auxiliary Request 7 previously on file, together with amended description and figures.
- VI. During the oral proceedings, held on 8 April 2014, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the following documents:
- Claims 1 to 4 as filed during the oral proceedings,
  - Pages 1 to 13 of the description as filed during the oral proceedings,
  - Drawings 1 to 11 filed with letter of 25 February 2014.
- VII. Claim 1 as amended according to the appellant's sole request reads as follows:

"An airbag inflating vertically in front of an occupant, wherein

the airbag has an intermediate part (82) and upper and lower parts (81, 83), the intermediate part (82) having a relatively small lateral width (W2), and the upper and lower parts (81, 83) having a lateral width (W1, W3) larger than that of the intermediate part (82) during inflation; and

the lateral width has a relationship expressed as  
 $W2 < W1 < W3$

where W1 is the maximum lateral width of the upper part (81),  
W2 is the minimum lateral width of the intermediate part (82), and

W3 is the maximum lateral width of the lower part (83),

wherein:

- a) the airbag has two panels only, namely a front panel (80B) and a rear panel (80A),
- b) said front panel (80B) and said rear panel (80A) each having sides (1, 2, 3, 11, 12, 13) with:
  - b1) forefront linear sides (1f, 3f, 11f, 13f),
  - b2) fronts (1f', 3f', 11f', 13f') of the sides (1, 3, 11, 13), said fronts being contiguous to the forefront linear sides (1f, 3f, 11f, 13f) and being curved toward the centers of the front and rear panels (80B, 80A), respectively, and
  - b3) rear sides (1r, 3r, 11r, 13r) extending from the curved fronts (1f', 3f', 11f', 13f'),
- c) said front panel (80B) further comprising a side (14) having:
  - c1) a rectangular projection (15) in the center, the projection (15) having sides (15a, 15b) continuing to said side (14) of the front panel (80B), and a side (15c) connecting the sides (15a, 15b) of the projection (15), and
  - c2) sides (14a, 14b) between both sides (15a, 15b) of the projection (15) and the rear sides (11r, 13r), said sides (14a, 14b) being sewn up with the adjacent sides (15a, 15b) of the projection (15),
- d) said rear panel (80A) further comprising a side (4) extending from the rear sides (1r, 3r) and having:
  - d1) a rectangular cut (5) in the center and

- d2) sides (4a, 4b) on both sides (51, 53) of the cut (5), said sides (4a, 4b) on both sides (51, 53) of the cut (5) being sewn together,
- e) the front panel (80B) and the rear panel (80A) being sewn together along their peripheries with
  - e1) seams (20, 21) connecting the forefront linear sides (1f, 3f, 11f, 13f) and the curved fronts (1f', 3f', 11f', 13f') of the front panel (80B) and the rear panel (80A), wherein, since the curved fronts (1f', 3f', 11f', 13f') are provided, the intermediate part (82) with a small lateral width (W2) can be formed, and
  - e2) a seam (48) connecting the rear panel (80A) at the rear sides (1r, 3r) extending from the curved fronts (1f', 3f') and the front panel (80B) at the side (15c) connecting the sides (15a, 15b) of the projection (15)."

The appellant also provided an amended description (pages 1 to 13) in order to include a reference to the known prior art (pages 1 and 2, paragraph [0002]), correct an inconsistency with regard to reference signs used in the application (page 6, paragraph [0009]: "Numeral 15c denotes a side connecting the sides 15a and 15b."), adapt the description to the new set of claims (pages 8 and 9, paragraphs [0019] to [0023] and [0025]) and correct a mistake with regard to reference signs (pages 12 and 13, paragraph [0033]). Moreover, Figures 2 and 3 were amended to show reference signs consistent with the reference signs used in the description.

VIII. The appellant's arguments may be summarised as follows:

New claim 1 was based on original claims 1 and 2 and included further features defining the front and the rear panel, as originally disclosed in the description and in Figures 2 and 3 of the present application. The new description included a brief discussion of documents D1 (US 2002/017774 A1), D2 (DE 195 19 998 A1) and D3 (JP 2001 233157 A) in paragraph [0002]. Paragraphs [0019] to [0023] and [0025] were adapted to the new claims. In Figures 2 and 3 and in paragraph [0009] of the description, the reference numbers were clarified, and a corresponding amendment was incorporated in paragraph [0033].

Claim 1 defined the features of each panel which made clear that the sides of the panels were provided to form the upper part of the airbag having a smaller width than the lower part of the airbag when inflated. Furthermore, the definition of the sides of each panel being sewn up (features c2) and d2)), and the seams connecting the panels to each other (feature e)) showed that the two panels formed an airbag according to the present invention.

In document D1, the airbag according to Figure 11 showing a two-piece structure did not comprise two panels being shaped and sewn together as defined in claim 1 by features c), d) and e). In particular, D1 did neither describe nor render obvious an airbag comprising two panels having features b1) to b3) in common and being distinguished from each other by features c1), c2) and d1), d2), the panels being sewn together along their peripheries according to feature e). Therefore, the subject-matter of claim 1 was neither described in D1 nor rendered obvious by D1 or the combined teaching of D1, D2 and D3.

## **Reasons for the Decision**

1. The appeal is admissible.

2. *Amendments*

Claim 1 according to the appellant's sole request has been amended by combining claims 1 and 2 as originally filed and including further features to specify the front and the rear panels and the seams with regard to the front and rear panel being sewn together. The basis for these further features can be found in Figures 2 and 3 and in paragraphs [0005] to [0007], [0012] to [0016], [0031] and [0033] of the application as filed. Claims 2 and 4 correspond to claims 3 and 4 as originally filed, and claim 3 has been introduced having its basis in paragraph [0029] of the application as filed.

Furthermore, the description has been amended to acknowledge the relevant prior art and to bring it into conformity with the amended claims, and figures 2 and 3 and pages 6, 12 and 13 have been amended to remove inconsistencies in respect of reference signs.

Accordingly the board is satisfied that the amendments do not give rise to objections, in particular under Article 123(2) EPC.

3. *Patentability*

3.1 Although the final remarks in the decision under appeal (see point II above) do not constitute a reasoned statement of the examining division in respect of novelty and inventive step, and although present claim 1 differs substantially from any of the



independent claims considered by the examining division, the board nonetheless considers it as appropriate to explain in detail why D1 and the prior art cited in the application as filed with reference to figures 4 to 11 do not prejudice novelty and inventive step of the claimed subject-matter.

- 3.2 An airbag consisting of two panels only and having an upper part, an intermediate part and a lower part having a lateral width which satisfies the relationship  $W2 < W1 < W3$  (as specified in claim 1 in the introductory portion and by feature a)) is known from D1 (see Figure 11 and paragraphs [0111] to [0121], also referring to the modification shown in Figure 5(C)). The front panel and the rear panel according to D1 show forefront sides, curved fronts contiguous to the forefront sides and rear sides extending from the curved fronts, similar to the definition of sides in features b), b1) to b3) of claim 1. D1 does not explicitly describe the forefront sides to be linear as specified in feature b1), but when looking at the modification according to Figure 5(C), a linear portion can be recognised. Moreover, the front panel and the rear panel in D1 are sewn together along their peripheries with seams so that an intermediate part with a small lateral width can be formed, as specified in features e) and e1). However, D1 fails to show
- a side of the front panel having a rectangular projection in the center, the projection having sides continuing to said side of the front panel, and a side connecting the sides of the projection, and sides between both sides of the projection and the rear sides being sewn up as defined by features c1) and c2),
  - a side of the rear panel extending from the rear sides and having a rectangular cut in the center

and sides on both sides of the cut being sewn together as specified by features d1) and d2),  
- a seam connecting the rear panel at the rear sides and the front panel at the side connecting the sides of the projection as defined in feature e2).

The rectangular projection of the front panel and the rectangular cut of the rear panel are provided so that the inflated airbag has a larger volume and thickness in the lower part compared to the upper part, as can be derived in particular from the representation of the inflated airbag in Figure 11 of the application and also from the manufacturing steps described in the application with regard to Figures 4 to 11.

However, such larger volume and thickness in the lower part of the inflated airbag is already realised with the airbag known from D1 manufactured according to the two-piece structure (comprising only a front panel and a rear panel) shown in Figure 11 when moving the cutaway portions 39 of both panels in the upward direction, as mentioned in paragraph [0121] of D1 with regard to this two-piece structure with reference to Figure 5(C).

Therefore, when trying to further increase volume and thickness in the lower part of the airbag known from D1, document D1 already teaches the parameters which have to be modified, namely the position of the cutaway portions of both panels and, as the skilled person will derive from Figure 11 in an obvious manner, the widths of the front and rear panels in the lower portion. The board does not consider that it would be obvious to modify the airbag known from D1 by additionally providing the front panel with a rectangular projection and the rear panel with a rectangular cut, even though

this is known, as such, from the prior art described in the application itself with reference to Figures 4 to 11. In particular, such modification of the airbag of D1 would render the manufacturing process much more complex. Moreover, the board cannot recognise any further advantages which would suggest abandoning the known and simple manufacturing method disclosed in D1. In the absence of any motivation for the skilled person to apply the known complex manufacturing method to the simple airbag's design according to D1, the proposed modification of the airbag according to D1 cannot be regarded as an obvious one. The other documents on file, namely documents D2 and D3, also do not suggest such modification.

- 3.3 Starting from the known prior art cited in the original application documents (see Figures 4 to 11), the board cannot find that an airbag as specified in claim 1 is suggested by any of the prior art documents on file. The prior art mentioned in the application relates to an airbag manufactured by providing a front panel having a rectangular projection and a rear panel having a rectangular cut. However, the panels lack curved fronts contiguous to the forefront linear sides (as specified, in particular, by features b2) and e1)), and the lateral width of the inflated airbag is (in contrast to the introductory portion of claim 1) approximately constant. The problem to be solved, starting from this known airbag, corresponds to the problem as described in the application documents, i.e. to provide an airbag capable of receiving the occupant's arms at low costs.

When turning to document D1, although D1 does not address this specific problem, the skilled person might find a solution to the problem because - as mentioned

above - D1 teaches to modify an airbag having a two-piece structure so that the relationship of lateral widths as claimed ( $W2 < W1 < W3$ ) is achieved. However, since the manufacturing method of the airbag in D1 is completely different from the method according to the cited prior art, which requires a number of additional folding and sewing steps, the person skilled in the art would not be tempted to combine both teachings which are obviously incompatible. On the contrary, the obvious solution to the problem posed would be to apply the complete teaching of D1. This would not only provide an airbag capable of receiving the occupant's arms, but would also reduce the costs of manufacturing. However, as already argued previously, the result then would be an airbag which does not show features c1), c2), d1), d2), e2).

3.4 Finally, the board notes that documents D2 and D3 constitute less appropriate starting points than D1 and the prior art cited in the application as filed with reference to Figures 4 to 11, in view of the fact that the airbags disclosed by these documents do not meet the claimed requirement for the lateral width of  $W2 < W1 < W3$ .

3.5 Accordingly, the board comes to the conclusion that the subject-matter defined in independent claim 1 is novel and cannot be derived in an obvious manner from the available prior art and consequently is to be considered as involving an inventive step (Article 56 EPC 1973).

4. Claim 1, together with dependent claims 2 to 4 relating to particular embodiments of the invention and the amended description and amended figures, therefore form a suitable basis for the grant of a patent.

## 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 4 as filed during the oral proceedings,
  - Pages 1 to 13 of the description as filed during the oral proceedings,
  - Drawings 1 to 11 filed with letter of 25 February 2014.

The Registrar:

The Chairman:



B. Atienza Vivancos

G. Pricolo

Decision electronically authenticated