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Datasheet for the decision of 7 June 2013

Case Number: T 0218/10 - 3.2.01

Application Number: 03029604.0

Publication Number: 1433664

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Language of the proceedings: EN

Title of invention:
Automobile bumper structure

Patent Proprietor:
Mazda Motor Corporation

Opponent:
Daimler AG

Headword:
-

Relevant legal provisions:
EPC Art. 54(2), 56

Keyword:
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
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Catchword:
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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0218/10 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 7 June 2013

Appellant: (Opponent)
Daimler AG
D-70546 Stuttgart (DE)

Representative:
-

Respondent: (Patent Proprietor)
Mazda Motor Corporation
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 2 December 2009 rejecting the opposition filed against European patent No. 1433664 pursuant to Article 101(2) EPC.

Composition of the Board:

Chairman: G. Pricolo
Members: H. Geuss
D. T. Keeling

Summary of Facts and Submissions

I. The appeal is directed against the decision of the opposition division, posted on 2 December 2009, rejecting the opposition filed against the European patent No. 1 433 664.

II. The opposition division held that the subject-matter of claim 1 as granted is new and inventive in view of document

WO 02/074570 (**D6**).

The opponent appealed against this decision and alleges lack of inventive step with respect to document D6 alone and in combination with documents

EP 1072476 A2 (**D8**),
JP 2002 205613 (**D9**),
DE 600 09 985 T2 (**D10**),
FR 2445 783 (**D11**),
EP 1 241 080 A2 (**D12**) and
WO 01/00478 A1 (**D13**).

III. During oral proceedings before the Board of Appeal held on 7 June 2013 the appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed.

IV. The wording of claim 1 as granted is as follows:

An automobile bumper structure comprising:
a bumper face (2) in which an opening portion (4) used for introducing outside air is formed; said bumper face including a bumper lower face (2b) beneath said opening portion:
a reinforcement member (20) which is provided behind and inside of said bumper lower face (2b);
a grille (10) which is a separate body from the bumper face (2) is attached to the opening portion (4) from behind, said grille is united with said reinforcement member (20),
said bumper lower face protrudes ahead of said opening portion (4) in the vehicle front direction and has a rearward-receding shape from the tip thereof down below;
characterized in that:
said reinforcement member (20) includes an upper-plane portion (24) which extends toward the vehicle front, a front-plane portion (26) which extends downward from the upper-plane portion, and a lower-plane portion (28) which extends rearward from the front-plane portion, so that the reinforcement member (20) goes substantially along the shape of the bumper lower face (2b) behind and inside of the bumper lower face; and
a vertical rib (32;82) is formed across the upper-plane portion, the front plane portion and the lower-plane portion of the reinforcement member.

V. The appellant's (opponent) submissions, as far as they are relevant to the decision, may be summarized as follows:

Document D6 discloses in particular the feature that the reinforcement member goes *substantially* along the shape of the bumper lower face. "Substantially" in the sense of claim 1 means that the distance between the lower bumper face and the reinforcement member is not obliged to be equal along the whole shape as shown in figure 4a of the patent specification, demonstrating that the shape of the reinforcement member differs from the profile of the lower bumper face. The same situation is depicted in D6, where the element 16 (Luftleitblech) does not follow exactly the shape of the part 21 (Unterlippe) which corresponds to the bumper lower face, but however, element 16 "goes *substantially* along the shape" of lower bumper face. Therefore, this feature is disclosed in document D6.

As a further line of argument, the elements 16 and 38 in D6 are made of a one-form molded piece. This single element constitutes a reinforcement member in the sense of the claim. Since the outside edge of the vertical ribs follows the shape of the lower bumper face (Unterlippe 21), this single reinforcement piece, however, follows the shape of the bumper lower face. Thus the feature that the reinforcement member goes substantially along the shape of the bumper lower face is shown in fig. 4 of D6.

In any case, even assuming that the feature under consideration is not disclosed in D6, it would be rendered obvious for the skilled person. The skilled person would know that a rib - in the case of a collision with a pedestrian - would cause a high specific load to the lower leg which could be avoided by a large area brace support of the lower bumper face.

Document D8 discloses explicitly a front portion of the reinforcement member being congruent with the form of the bumper face, cf. D8, paragraph [0010]. Furthermore, D9 and D11 disclose a reinforcement member whereby the shape of the reinforcement member is adapted to the shape of the bumper lower face. D10 discloses a reinforcement member according to the features of claim 1. A further reinforcement member according to the invention is disclosed in D12 and D13. As a result, from these documents the skilled person would gather the information that a large area brace support, reinforced with ribs, would improve the collision behavior of the bumper lower face according to D6. Such an improvement would be easy for a skilled person, and could be realized by a further element between the ribs and the lower bumper face.

VI. The respondent (patent proprietor) replied to these arguments as follows:

At least the feature that the reinforcement member goes substantially along the shape of the bumper lower face is not disclosed in document D6. The problem to be solved with this feature is to improve the surface load condition to the lower extremities of a pedestrian in the case of a collision.

The bumper structure in D6 is completely different to the bumper according to the invention, since the element 16 in D6 fulfils two requirements. Firstly preventing incoming air from moving downwards and guiding it to the heat exchanger (cf. D6, figure 4, part 30 and page 6, 4th paragraph). Secondly supporting

the lower bumper end in the case of a collision with a pedestrian. The combination of these requirements led to the structure consisting of the elements 16 and 38 as shown in fig. 4 of D6 in which a reinforcement member 16 acts as an air guide and the ribs 38, which outer edge follows the shape of the lower bumper face, confer the desired collision proprieties. However, there is no hint in D6 to change the structure as shown in fig. 4. On the contrary, if the air deflector were amended in such a way that it went along the shape of the bumper surface, it would no fulfill the desired function of deflecting the incoming air.

Document D8 does not disclose ribs but a shaped reinforcement member. On account of the air deflection function of the reinforcement member 16, D8 would not prompt the skilled person to modify this element. With respect to the passage of D8, paragraph [0010], according to which it is advantageous that the front side of the support member 3 is congruent with the shape of the bumper face, the skilled person would realize that the bumper structure as shown in fig. 4 of D6 already follows this suggestion: the outside edge of the ribs 38 follows the shape of the outer surface of the bumper skin.

In conclusion, the skilled person would not be able to modify the part consisting of the air deflection element 16 and the reinforcement ribs 38 without inventive activity. In particular he would not add a further element as a reinforcement member between the ribs and the bumper lower face in the sense of the claim. For production limitations, it would not be possible to integrate this further element in the one

form moulded part 16,38 of D6. A supplementary element, moreover, would lead to an increase in costs and weight which would not be accepted by a skilled person and contravenes the intention of the contested invention, cf. paragraph [0008].

The further documents as cited by the appellant do not disclose the feature under consideration or render it obvious. It is not contested that reinforcement elements and ribs as such are known in the prior art. However the arrangement having the reinforcement member directly behind the bumper surface and the ribs behind it to support the U-shaped reinforcement member is not shown or rendered obvious by the documents as cited.

Reasons for the Decision

1. The appeal is admissible.

2. The subject matter of claim 1 as granted is new in view of D6, Art. 54(2) EPC.

At least the feature that the reinforcement member goes substantially along the shape of the bumper lower face is not disclosed in document D6.

3. The board does not follow the appellant's argument that the air deflection part (Luftleitblech 16) of D6 "goes substantially along the shape of the bumper lower face".

3.1 Element 16 of D6 is a "tongue-shaped air deflection element" (cf. D6, page 8, paragraph 4) which shape substantially differs from that of the bumper lower

face 49. In fact, as can be seen in the cross-sectional view of figure 4, although the element 16 contacts the bumper lower face 49 at its upper and lower portions 44, 45, it has a curvature opposite to that of the bumper lower face 49 and thus essentially extends away from the bumper lower face 49 between said upper and lower portions 44, 45. It is accepted that in the embodiment of figure 4A of the contested patent the shape of the reinforcement member 20 does not conform exactly to the shape of the bumper lower face 2b. However, in this embodiment the reinforcement member 20 does not extend away from the bumper lower face 2b, and essentially follows its profile.

The board therefore comes to the conclusion that even a broad interpretation of the feature in suit, in particular of the term "substantially", does not cover the situation as shown in figure 4 of D6.

3.2 The appellant further submitted that in D6 the ribs 38 were part of the reinforcement member and that their edges followed the shape of the bumper lower face 49. Accordingly, also in D6 the reinforcement member went along the shape of the bumper lower face 49. However, claim 1 of the contested patent requires that it is the reinforcement member with its upper-plane portion, which extends towards the vehicle front, its front-plane portion, which extends downward from the upper plane portion, and its lower-plane portion, which extends rearward from the front-plane portion, that goes substantially along the shape of the bumper lower face. Claim 1 indeed specifies that the reinforcement member includes said portions **so that** the reinforcement member goes substantially along the shape of the bumper lower face. Furthermore, claim 1 recites that the

reinforcement member includes a vertical rib formed across the upper-plane portion, the front-plane portion and the lower-plane portion of the reinforcement member. Accordingly, the rib is a part distinct from said upper-plane, front-plane and lower-plane portions. As a consequence, the upper-plane portion, the front-plane portion and the lower-plane portion of the reinforcement member in D6 can only be regarded as portions of the element 16 in figure 4, from which the ribs 38 are excluded. However the member 16, as explained above, does not go substantially along the shape of the lower bumper face.

3.3 Consequently, at least the feature that the reinforcement member goes substantially along the shape of the bumper lower face is not disclosed in document D6. The board considers that this feature renders the subject-matter of claim 1 inventive, Art. 56 EPC 1973.

4. With respect to the problem to be solved, the respondent (patent proprietor) argued that the feature under consideration improves the surface load condition to the lower extremities of a pedestrian in the case of a collision. This point was not contested by the appellant (opponent). The Board sees no reasons to take a different view.

5. However, the appellant submitted that a skilled person would change the design of the element 16 of D6 in order to arrive at a large area support for the lower bumper face and thereby improve the collision properties of the bumper structure.

The board does not accept this argument. The element 16 as shown in fig. 4 of D6 is an air deflection element with a well-chosen profile which serves to guide the incoming air directly to the heat exchanger (cf. D6, page 8, paragraph 4). A change of design of this air deflection element would cause harm to the air guiding effect and would therefore not be considered by the person skilled in the art.

6. For this reason also the disclosure of D8 cannot negate the contribution of the feature in question to inventive step. D8 discloses that advantageously the end of the support which faces the bumper is formed in such a way that it is congruent with the shape of the spoiler. However, it remains unclear how the skilled person could integrate this feature in the bumper structure of D6.

6.1 The appellant's argument that the skilled person would integrate an element between the ribs and the bumper lower face is not accepted. In this aspect the board follows the argument of the respondent that the skilled person would avoid a one-form moulded part with a supplementary reinforcement member going along the shape of the lower bumper face, as such part would be quite difficult to produce. A supplementary part would be necessary which, however, would result in an increase of parts and this would be contradictory to the aim of the invention ("keeping the number of parts from increasing", cf. paragraph [0008]).

Anyway, irrespective of whether such element to be located between the ribs 38 and the bumper lower face 49 of the bumper structure of D6 would be provided as

an integral portion of the reinforcement member or as a separate member attached to the ribs 38, there is no motivation for the skilled person to consider such additional element, because the function of supporting the bumper lower face, which additional element would fulfill (see D8, paragraph [0010]) is already fulfilled in D6 by the ribs 38 (see D6, page 7, third paragraph).

7. For the same reasons the further documents D9 to D13 cannot call in question the inventiveness of the contested claim 1. The board agrees that ribs (cf. D9 and D10) and reinforcement elements following the shape of a bumper face (cf. D11 to D13) are *per se* known in the state of the art. However, the skilled person would not amend the reinforcement member according to D6. In particular, as already stated above, the fact the reinforcement member according to D6 also acts as an air deflection element would necessitate a considerable change in the design of the bumper element which could not be performed without an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

A. Vottner G. Pricolo