Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 6 December 2019

Case Number: T 2769/17 - 3.2.01

Application Number: 12700928.0

Publication Number: 2668068

IPC: B60R19/18, B60R19/02

Language of the proceedings: EN

Title of invention:
TUBULAR BEAM OF AN AUTOMOTIVE STRUCTURE HAVING AN IMPROVED IMPACT BEHAVIOR

Patent Proprietor:
Constellium Singen GmbH

Opponent:
Benteler Automobiltechnik GmbH

Headword:

Relevant legal provisions:
EPC Art. 100(a), 100(b), 100(c), 54
RPBA Art. 13(1)

Keyword:

Added subject-matter (no)
Insufficiency of disclosure (no)
Novelty - (yes)
Late-filed inventive step objections - admitted (no)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2769/17 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 6 December 2019

Appellant: (Patent Proprietor)	Constellium Singen GmbH Alusingen-Platz 1 78224 Singen (DE)
Representative:	Constellium - Propriété Industrielle C-TEC Constellium Technology Center Propriété Industrielle Parc Economique Centr'Alp 725, rue Aristide Bergès CS10027 38341 Voreppe (FR)
Appellant: (Opponent)	Benteler Automobiltechnik GmbH An der Talle 27-31 33102 Paderborn (DE)
Representative:	Osterhoff, Utz Bockermann Ksoll Griepenstroh Osterhoff Patentanwälte Bergstraße 159 44791 Bochum (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 3 November 2017 concerning maintenance of the European Patent No. 2668068 in amended form.**

Composition of the Board:

Chairman	G. Pricolo
Members:	J. J. de Acha González
	S. Fernández de Córdoba

Summary of Facts and Submissions

I. The appeals of the patent proprietor and of the opponent lie against the decision of the Opposition Division to maintain the patent in amended form according to the auxiliary request 2 filed during the oral proceedings before the Opposition Division.

II. In the contested decision the following pieces of prior art are inter alia cited:

OV1: set of documents for public prior use 1 that comprises the following documents:
- OV1: technical drawing of the rear bumper beam of an Audi Q5;
- OV1.1 to OV1.5: details of OV1;

OV2: set of documents for public prior use 2 that comprises the following documents:
- OV2: technical drawing of the front bumper beam of an Audi Q5;
- OV2.1 to OV2.3: details of OV2;

OV3: set of documents for public prior use 3 that comprises the following documents:
- OV3: technical drawing of the front bumper beam of an Audi A4 8K;
- OV3.1 to OV3.2: details of OV3;

D6: WO 99/15365 A1; and
D7: EP 1854675 A1.

With its statement of grounds of appeal the opponent filed for the first time the following set of documents

as evidence for a new alleged public prior use (OV4) comprising:

- OV4: technical drawing of the front bumper beam of an Audi A7;
- OV4 Wikipedia print out about Audi A7;
- OV4 detail of the drawing OV4;
- OV4 expert's report of an acquired bumper beam of an Audi A7; and
- OV4 notarial certification of the demounted beam from the Audi A7.

III. Oral proceedings before the Board were held on 6 December 2019.

IV. The appellant (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained as granted or, in the alternative, that the patent be maintained in amended form according to one of the auxiliary requests 1 to 10, as filed with the statement of grounds of appeal, or auxiliary request 11, as filed with the letter dated 4 November 2019.

The appellant (opponent) requested that the decision under appeal be set aside and that the European patent be revoked.

V. Claim 1 as granted reads as follows (feature analysis as referred to by the parties):

(a) Bumper crossbeam (10, 10', 10", 10'"), which is substantially symmetrical with respect to a plane of symmetry (Y) and globally oriented in a direction (T) perpendicular to the plane of symmetry (Y),
(b) designed to absorb the energy dissipated by a shock

(c) generated by a concentrated or substantially horizontal distributed force and oriented in a direction (L) perpendicular to said direction (T),
(d) said crossbeam comprising two attachment areas (12a, 12b) designed to be connected to two supporting parts (20a, 20b) of the automotive structure,
(e) which are symmetrically arranged with respect to the plane of symmetry (Y) and distant from each other by a distance D,
characterised in that
(f) said crossbeam being made from a globally tubular body
(g) and having a cross section (S_n) which varies according to a monotonic function of the distance (d) to the plane of symmetry (Y), over most of its length between said attachment areas (12a, 12b),
(h) said crossbeam comprises two weakened areas (15a, 15b),
(i) which are symmetrical with respect to the plane of symmetry (Y),
(j) which are remote from said plane of symmetry by a distance (d_w) of between 0.10*D and 0.40*D, preferably between 0.15*D and 0.35*D, more preferably between 0.20 *D and 0.30*D,
(k) and in which
(l) the cross section (S_w) is different from the nominal cross section (S_n)
(m) such that the second moment of area about the axis (Z) perpendicular to the plane (L, T) is lower in said weakened areas than the second moment of area of the corresponding nominal cross section.

The wording of claim 1 of the auxiliary requests 1 to 11 is irrelevant for the present decision.

Reasons for the Decision

1. Interpretation of claim 1 as granted

1.1 Claim 1 as granted relates to a symmetrical bumper crossbeam made from a globally tubular body, designed to absorb energy and comprising two attachment areas. Further feature g of claim 1 specifies that the beam has:

> a cross section which varies according to a monotonic function of the distance to the plane of symmetry, over most of its length between said attachment areas.

1.1.1 The patent proprietor defends that feature g of claim 1 does not exclude a constant cross section of the beam over most of its length because it has to be interpreted in a mathematical manner like the Opposition Division did (see point 15 of the contested decision). Accordingly, feature g defines the section as a function of the distance to the plane of symmetry, the function being a monotonic function. The wording "varies" represents a commonly used term in mathematics when describing functions as being dependent on a variable x (y=f(x)). With this mathematical point of view and considering that a monotonic function can per definition be constant, a constant cross section would therefore be included in the subject-matter of granted claim 1.
Further, it is established case law of the Boards of Appeal that illogical interpretations of a claim should be ruled out. In the present case, the description of the patent makes clear that a constant cross section is an embodiment of the invention, and thus it would be

illogical to exclude those from the claim interpretation (see par. 12, 23, 21 and 25 of the patent specification).

The Board disagrees and shares the view of the opponent (see in particular its statement of grounds of appeal page 2, third and fourth paragraphs). As pointed out by the patent proprietor, it pertains to established case law that illogical interpretations of the claim should be ruled out and that a claim should be interpreted in a technically sensible manner and be given the broadest, technical logical interpretation. It also pertains to established case law that the description cannot be used to give a different meaning to a claim feature which in itself imparts a clear technical teaching to the skilled person. In the present case the subject-matter defined by granted claim 1 is under discussion and feature g of the claim states that the cross section of the beam varies, i.e. changes, over most of its length and this variation is according to a monotonic function. The discussion at hand has to do with patent claim wording and not with pure mathematics. The skilled person when reading the claim and in particular feature g clearly understands that the section varies and that the variation is according to a monotonic function of the distance to the plane of symmetry. The terms of feature g of the claim have a clear technical meaning and there is no need to use the description to interpret them.
The fact that the description might consider a constant cross section as an embodiment of the invention is not a reason to give a different meaning to the terms of the claim. Also the fact that it would be illogical to exclude those embodiments is not a matter of illogical interpretation of the claim wording but rather a matter of support of the claims by the description.

Consequently, a constant cross section of the beam over most of its length between the attachment areas is excluded from the subject-matter of claim 1 by feature g. The variation of the cross section is thus done according to a monotonic function and, as a consequence, it can only be a monotonic increasing or decreasing function.

1.1.2 Making reference to the German translation of claim 1 in the patent specification, the opponent considers that the term "over most of its length" in feature g has to be read as meaning the part of the beam between the attachment areas that is largest. Accordingly, it must not necessarily be more than 50% of the beam between the attachment areas.

The Board does not share this view and concurs with the patent proprietor. "Over most of its length" can only mean more than 50% of the part of the beam between the attachment areas. That the German translation of claim 1 might leave room for the interpretation of the opponent is irrelevant since according to Article 70(1) EPC the authentic text of a European patent is the text in the language of the proceedings. The wording of the English version of the claims is therefore the relevant one; it is as such clear and not open to interpretation.

1.2 The term "nominal cross section" in features k and l of claim 1 needs interpretation since the meaning of the term is both undefined in general terms and also undefined in the claim. The opponent, as the Opposition Division in its decision, takes the view that "the nominal cross section" is the cross section at the plane of symmetry 0Y in OV2 (see points 25 k) and 40 of

the contested decision). The Opposition Division does not give any reason for its selection of the nominal cross section, which it merely assumes to correspond to the section at the plane of symmetry. The opponent alleges that for the skilled person, a nominal section corresponds to the initial cross section from which the variation begins.

The Board does not agree. A nominal cross section could be the section considered by the Opposition Division and the opponent but it could also be an average section within a length of the beam or the initial section of the globally tubular member from which the beam is made. Consequently, it is appropriate to look into the description for any explicit definition for interpreting this claim's term.
The term "the nominal cross section" - so the proprietor - is univocally defined in paragraph 12 of the patent specification as being the cross section which varies according to the monotonic function of the distance d to the plane of symmetry in the majority of the beam. Accordingly, the nominal section is the set of all cross sections of the bumper beam where the section varies according to a monotonic function.

2. Sufficiency of disclosure - Article 100(b) EPC

2.1 The ground for opposition under Article 100(b) EPC does not prejudice the maintenance of the patent as granted, since the European patent discloses the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

2.2 In the opponent's view the contested patent discloses a single preferred embodiment of the invention, in which the bumper beam has a constant cross section over most

of its length. In contrast, according to claim 1 the beam has a varying cross section over most of its length. The patent specification remains however silent on how the skilled person can produce a varying cross section over the majority of the cross beam's length.

First, the Board notes that the patent specification discloses actually only an embodiment with a varying cross section. Indeed according to paragraph 25 of the patent, even if the cross section in the figures is represented as a constant cross section, this is done for simplification purposes. Also according to the beginning of paragraph 12 of the patent specification, it is stated that, according to the invention, the bumper cross beam is made from a globally tubular body having a constant cross section, or, more generally, a progressively varying cross section. Consequently, the starting point for the production of the beam is a tubular body with such a shape. Further, later on in the description it is directly and unambiguously disclosed that the cross section between attachment areas of the beam according to the invention varies according to a monotonic function which may be a monotonically increasing function of d or a monotonically decreasing function of d. This is not in contradiction with the content of paragraph 12 of the patent which deals with another object of the invention, it being the manufacturing process of a bumper beam but not necessarily one that produces the bumper beam claimed.

With respect to the objection of the appellant/opponent that the skilled person is not in a position to produce the bumper beam according to claim 1, the Board follows the view of the patent proprietor and of the Opposition Division in its decision. There are a plurality of

methods belonging to the skilled person's common general knowledge for manufacturing vehicle bumper beams, for example press-forming, machining, or hydroforming. Adapting one of these methods in order to manufacture a specific vehicle bumper beam having the features as defined in granted claim 1 would only require the ordinary skills of a person skilled in the art, who is constantly faced with the problem of manufacturing workpieces of different, and even varying, dimensions.

3. Inadmissible extension - Article 100(c) EPC

3.1 The ground for opposition under Article 100(c) EPC does not prejudice the maintenance of the patent as granted, since the subject-matter of the European patent does not extend beyond the content of the application as filed.

3.2 Granted claim 1 differs from originally filed claim 1 only in that the following wording of feature g as originally filed:

> "having a cross section (Sn) which varies progressively, i.e. according to a monotonic function of the distance (d) to the plane of symmetry (Y)",

was amended to (differences above highlighted by the Board):

> "having a cross section (S_n) which varies according to a monotonic function of the distance (d) to the plane of symmetry (Y)".

3.3 The appellant/opponent considers that the deletion of "progressively" extends the subject-matter of the application as originally filed. In particular, in his

view progressively varying as originally claimed means a continuous steady progression such that the monotonic function can only be a strictly monotonous function, either decreasing or increasing. Also the description as originally filed discloses two possibilities, a constant cross section of the beam or a progressively varying cross section (see page 4, lines 16 et seqq. of the application as originally filed). Consequently, variations of the cross section of the beam in which segments of the cross section remain constant fall under the subject-matter of granted claim 1. This represents in his opinion an unallowable intermediate generalisation.

The Board disagrees. A progressive variation is not exclusively a steady variation. It can also be in stages as pointed out by the patent proprietor. Accordingly, "progressively varying" does not imply a continuous steady progression, the progression can happen in defined intervals and remain constant in smaller intervals within the defined intervals.
It follows that a monotonic increasing or decreasing function of the cross section as claimed in claim 1 (see point 1.1.1 above) is, per definition, a progressively - steadily (when strictly monotonous) or in stages (when not) - varying section. Thus deleting the wording "progressively, i.e." from originally filed claim 1 does not represent an unallowable extension of the subject-matter of the application as originally filed.

4. Novelty - Article 100 (a) and 54 EPC

4.1 The subject-matter of granted claim 1 is new because it is not disclosed in any of the alleged public prior uses according to OV2, OV1 and OV4.

4.2 Regarding OV2 the opponent and the Opposition Division interpret the beam shown in the technical drawing of OV2 in different ways when assessing novelty of the subject-matter of claim 1 as granted.

4.2.1 As put forward during the oral proceedings before the Board, the opponent defends with respect to feature g, that the weakened areas correspond to the part of the beam from Y +/- 200 to Y +/- 432of the cross beam and that the attachment areas are separated by a distant of 864 (from Y -432 to Y +432).

However, bearing in mind the considerations above relating to the interpretation of the wording "over most of its length" (see point 1.1.2), feature g is not disclosed since the cross section does not then vary according to a monotonic function over most of its length between the attachment areas. The segment of the cross section presenting the monotonic variation represents less than 50% of the distance between the attachment areas and as a consequence it does not vary according to a monotonic function over most of its length. Accordingly, at least feature g is not shown in OV2.

4.2.2 As regards the reasons of the Opposition Division in its decision (see point 25 of the contested decision), the Board shares the view of the proprietor according to which OV2 does not disclose feature k. The Opposition Division considered that between 0Y and +/- 390 the cross section of the beam varies according to a monotonic function (feature g) and that the two weakened areas extend from +/- 200 and +/- 420. As mentioned above, the term "the nominal cross section" of claim 1 corresponds to the set of all cross sections

of the bumper beam where the section varies according to the monotonic function (see point 1.2 above). This set of sections is, according to feature k of claim 1, different form the cross section of the weakened areas. Consequently, as the monotonic part of the beam overlaps with the weakened areas in the Opposition Division's reasoning, the cross section of the weakened areas is not different from the nominal section. The reasons of the Opposition Division are therefore erroneous.

4.3 The novelty objections with respect to the disclosure of the public prior uses according to OV1 and OV4 presented by the opponent are not persuasive, since, as acknowledged by the opponent itself, those prior uses do not disclose a varying section of the crossbeam according to a monotonic function but a constant cross section over most of the length of the beam between the attachment areas.

The contested public availability of OV1 and the admissibility of the new alleged public prior use in appeal proceedings according to OV4 can thus be left aside, since these do not anticipate the subject-matter of granted claim 1.

4.4 Novelty of the subject-matter of granted claim 1 in view of the public prior use according to OV3 was formally raised by the appellant/opponent (see reply of the opponent to the appeal of the proprietor page 9, point 1) but not substantiated in the course of the appeal proceedings and further not pursued at the oral proceedings, during which the appellant/opponent did not address OV3 at all when discussing novelty of the subject-matter of granted claim 1. There is thus no need for the Board to question novelty over OV3.

5. Inventive step - Admissibility

5.1 During the oral proceedings before the Board the opponent raised for the first time an objection on inventive step starting from D6 or D7 as closest prior art in combination with the alleged public prior use according to OV1 or OV4.

5.2 According to Article 13(1) RPBA (Rules of Procedure of the Boards of Appeal OJ EPO 2007, 536) any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's discretion. The discretion shall be exercised in view of inter alia the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy.

5.3 The opponent requested the Board to admit the new lines of attack for inventive step since it was the first time that the claim was interpreted as implying that a constant cross section for the bumper beam did not fall under the subject-matter of claim 1 in particular in view of feature g. The Opposition Division in its decision saw it differently. This represented a surprising turn of events that justified a possibility to react with the above-mentioned new objections.

5.4 In the Boards' view the interpretation of feature g of claim 1 could not have surprised the appellant/ opponent. It is true that the Opposition Division decided when interpreting the subject-matter of granted claim 1 that a constant cross section formed part of the subject-matter claimed. However, the opponent challenged that view in the statement of grounds of appeal when arguing on sufficiency of disclosure and

unallowable extension of subject-matter, and stated that claim 1 as granted was limited to a varying cross section of the beam, a constant section being excluded. This notwithstanding, when discussing novelty in view of OV1 or OV4 for claim 1 as maintained by the Opposition Division, the appellant/opponent argued solely on the basis of the interpretation taken by the Opposition Division (according to which a constant cross section falls under feature g of claim 1). With communication pursuant to Article 15(1) RPBA of 2 September 2019, the Board expressed the preliminary opinion that it would follow the view of the opponent, according to which feature g of claim 1 would exclude the possibility of a monotonic function of the cross section being just a constant(see points 2.1 and 6 of the communication). The appellant/opponent however did not react to the communication by providing lines of attacks based on an interpretation of claim 1 which, although differing from that of the Opposition Division, was the one considered correct by the appellant/opponent itself. This would have been particularly appropriate in view of the fact that the lines of attacks of lack of inventive step formulated by the appellant/opponent during the oral proceedings were based on documentary evidence, namely D6 and D7, that were not cited before in the appeal proceedings and were not discussed in the contested decision. Consequently, the new objections filed at a very late stage of the appeal proceedings would, if admitted, unduly delay the appeal proceedings. Under these circumstances the Board decided to exercise its discretion under Article 13(1) RPBA not to admit the new inventive step objections based on a combination of D6 or D7 with OV2 or OV4.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is maintained as granted.

The Registrar: The Chairman:

A. Vottner G. Pricolo

Decision electronically authenticated