

Internal distribution code:

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

D E C I S I O N
of 9 May 2006

Case Number: T 0751/04 - 3.2.06

Application Number: 98830514.0

Publication Number: 0909607

IPC: B23K 37/04

Language of the proceedings: EN

Title of invention:

Clamp device for use in welding sheet metal elements

Patentee:

COMAU S.p.A.

Opponents:

DaimlerChrysler AG
Bayerische Motoren Werke
KUKA Schweissanlagen GmbH
Emil Bucher GmbH & Co. Modell- und Maschinenbau

Headword:

-

Relevant legal provisions:

EPC Art. 56, 123(2)

Keyword:

"Amendments - added subject-matter (no)"
"Inventive step - (yes)"

Decisions cited:

-

Catchword:

-

Case Number: T 0751/04 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 9 May 2006

Appellant: COMAU S.p.A.
(Patent Proprietor) Via Rivalta 30
I-10095 Grugliasco (Torino) (IT)

Representative: Notaro, Giancarlo
c/o Buzzi, Notaro & Antonielli d'Oulx
Via Maria Vittoria 18
I-10123 Torino (IT)

Respondent: DaimlerChrysler AG
(Opponent OI) Epplestrasse 225
D-70567 Stuttgart (DE)

Representative: Närger, Ulrike
DaimlerChrysler AG
Intellectual Property Management
IPM - C 106
D-70546 Stuttgart (DE)

Respondent: Bayerische Motoren Werke
(Opponent OII) Aktiengesellschaft
D-80788 München (DE)

Representative: Bücken, Helmut
Bayerische Motoren Werke
Aktiengesellschaft
Patentabteilung AJ-30
D-80788 München (DE)

Respondent: KUKA Schweissanlagen GmbH
(Opponent OIII) Blücherstrasse 144
D-86165 Augsburg (DE)

Representative: Ernicke, Klaus Stefan
Schwibbogenplatz 2b
D-86153 Augsburg (DE)

Respondent:
(Opponent OIV)

Emil Bucher GmbH & Co.
Modell- und Maschinenbau
Schlosstrasse 146-150
D-73054 Eislingen (DE)

Representative:

Fürst, Siegfried
Patent- und Rechtsanwälte
Hansmann & Vogeser
Nördlicher Ringstrasse 10
D-73033 Göppingen (DE)

Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted 6 May 2004
revoking European patent No. 0909607 pursuant
to Article 102(1) EPC.**

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. De Crignis
R. Menapace

Summary of Facts and Submissions

I. European Patent No. 0 909 607, granted on application No. 98830514.0, was revoked by the opposition division by decision posted on 6 May 2004. It based the revocation on the finding that the subject-matter of claim 1 of the main request and of the first auxiliary request was not novel (Article 54 EPC) and the subject-matter of claim 1 of the second and third auxiliary request did not involve an inventive step (Article 56 EPC) when compared with the prior art disclosed in

D4 DE-U-296 22 739.

II. The appellant (patentee) filed a notice of appeal against this decision on 17 June 2004 and simultaneously paid the appeal fee. With letter of 16 August 2004 the statement of grounds of appeal was filed, accompanied by a new set of claims.

III. With a communication dated 4 November 2005, accompanying the summons to oral proceedings, the Board indicated that D4 was considered to form the closest state of the art and that the discussion about inventive step should first address the problem to be solved by the claimed subject-matter.

IV. Oral proceedings were held on 9 May 2006. The appellant requested that the decision under appeal be set aside and the patent be maintained in amended form as filed during the oral proceedings. The respondents (opponents) OI, OII and OIII requested that the appeal be dismissed. OIV had been duly summoned but neither replied nor attended the oral proceedings.

Claim 1 according to the sole request reads as follows:

"Device for locating and locking in position components of pressed sheet metal (2,3) to be subjected to a welding operation, comprising:

- a first element (5) for supporting the sheet metal elements (2,3) in the proper welding position, said first element (5) being rigidly connected to a fixed support structure (7), and
- a second element (6) for clamping the sheet metal elements to be welded (2,3), said second element (6) being rotatably mounted on a body (12) carried by said fixed supporting structure (7) for rotation between an inoperative position, spaced from the first supporting element (5), and an operative position, in which it is adjacent to the first supporting element (5) and cooperates therewith so that said sheet metal components (2,3) are clamped in the proper welding position between said first and second elements (5,6),
- a cylinder (16) carried by said body (12) for rotating said second movable clamp element (6),
- wherein said body (12) carrying the movable clamp element (6) is supported by said fixed supporting structure (7) by means of said first supporting element (5), to which said body (12) carrying the movable clamp element (6) is directly connected by screws (17), and
- wherein said first supporting element comprises a plate (5) connected to a wall (7a) of the fixed supporting structure (7) by screws (19) engaged within holes of said plate having enlarged diameters, characterized in that:

- said plate (5) is a vertical plate arranged with its plane orthogonal relative to the axis of rotation (11) of said second element (6) and has an upper edge (5a) having when viewed in the direction of the rotational axis (11) of the second element (6) a shaped profile including a cavity with a bottom and two sides, for shape contact with a correspondingly shaped sheet metal element (3) of the structure to be clamped, so as to define a reference for the position of the structure to be clamped, along a horizontal direction orthogonal to said rotational axis (11),

- said wall (7a) of the fixed support structure (7) to which said vertical plate (5) is secured is a vertical wall which is also arranged with its plane orthogonal to the axis of rotation (11) of said second element (6),

- said screws (19) which connect said plate (5) to the wall (7a) of the fixed supporting structure (7) are arranged parallel to the axis of rotation (11) of said second element (6),

so that said vertical plate (5) can be registered in position over said vertical wall (7a) of the fixed supporting structure (7) simultaneously along two mutually orthogonal directions, in a plane orthogonal to the axis of rotation (11) of said second element (6) and orthogonally to said screws (19) which engage the holes of enlarged diameters, upon loosening of these screws (19)."

V. In support of its request the appellant essentially relied upon the following submissions:

Figures 2 to 4 were the basis for the amendments introduced in order to distinguish the subject-matter of claim 1 from the disclosure of D4. The shape of the

support plate was defined so as to take account of the locating function of the upper edge of the plate illustrated in these figures. Furthermore, it was specified that the plate (5) was secured to the wall (7a) of the fixed support structure (7) and how these parts were arranged relative to the axis of rotation (11) of the clamping member. Due to this arrangement the registering operation of the support plate could be performed by loosening of the screws (19) and shifting the plate in its plane.

D4 related to a similar clamping device for locating metal components to be welded. However, adjustment was more complex because of the use of shims and no suggestion was derivable to change the specific shape of the supporting structure (8) for the metal components to become a plate, leading to a simple adjustment procedure when arranged in the claimed position. Furthermore, D4 disclosed guidance noses and slots for guided vertical movement which did not allow a simultaneous registering operation in two directions and, since the upper surface of the known support was flat it did not suggest the claimed improvement concerning the shape of the upper edge of the structure (8). Furthermore, none of the other prior art documents disclosed or suggested such specific details.

VI. The submissions of the respondents can be summarized as follows:

Considering the requirements of Article 123 (2) EPC, the subject-matter of claim 1 of the main request represented an unallowable generalisation of the single embodiment disclosed in the patent in suit. Further

features had to be specified in the claim, particularly those features representing the connection of the plate (5) to the body (12) via the bracket (18) and screws (17).

The characterizing portion was not correctly delimited because in D4 also a plate was shown as a first element. Furthermore, in claim 1 the reference numeral (5) has been used for the first element as well as for the plate constituting the first element. According to the preamble the first element comprised the plate and according to the characterising portion only the plate was further defined. Thus it was not clear whether the first element could comprise further elements.

In any case, the claimed subject-matter lacked an inventive step (Article 56 EPC) in view of the prior art according to D4 and

D5 US-A-4 691 905.

When starting from D4 the technical problems to be solved were related, on the one hand to a simplified registering operation and, on the other, to the shape of the upper edge of the plate supporting the work piece. These problems were not related to each other and should be treated separately. D4 disclosed the adjustment of the support structure in a vertical plane orthogonally to the axis of rotation of second clamp element and it would not need inventive ingenuity to replace this structure by a plate essentially leading to the same adjustment possibility. The further features concerning the shape of the upper edge of the plate were themselves known from Figure 5(A) of D5, a document in the same technical field.

Reasons for the Decision

1. The appeal is admissible.
2. Amendments

Claim 1 includes the combination of features of claims 1 and 2 as originally filed.

- 2.1.1 The preamble additionally specifies that the body (12) carrying the movable clamp element (6) is directly connected by screws (17) to the fixed supporting structure (7). Support for this feature is to be found in the paragraph bridging pages 5 and 6 of the application as filed. The respondents contended that in this paragraph as well as in Figures 2 to 4 brackets (18) were specified and shown as being part of this connection. Therefore, the brackets (18) should also have been incorporated into the claim.

In accordance with the jurisprudence of the Boards of Appeal it is normally not admissible under Article 123(2) EPC to extract isolated features from a set of features which had originally been disclosed in combination for that embodiment. An amendment of this nature is only justified in the absence of any clearly recognizable functional or structural relationship among said features (see (T 1067/97)). As regards the bracket (18) a skilled person would immediately recognize that it is a mere intermediate piece to facilitate mounting of the body (12) to the fixed supporting structure (7) and that in fact only the screwed connection between the body and support is

essential for carrying out the invention. Therefore, the amendment omitting the brackets does not give rise to objections under Article 123 (2) EPC.

2.2 Article 84 EPC

With respect to the "first element (5)" the appellant raised a lack of clarity objection. In particular, the use of the reference number (5) in claim 1 for both the first element itself and for the plate comprised by the first element was confusing.

It is to be noted that the features of the pre-characterising portion of claim 1 are based on the device known from D4 (in which the "first element" is not a plate but only comprises a plate-like element for support of the pressed sheet metal components). The characterizing portion specifies the plate for support of the pressed sheet metal component further in a way which itself does not lead to any clarity problems. Whether the "first element" consists of a plate or comprises further parts is left open, but this does not lead to objections under Article 84 EPC either.

3. Novelty

It was undisputed that D4 represents the closest prior art and that only the features of the preamble were known from D4. Novelty was not in dispute during the appeal proceedings and the Board sees no reason to question it.

4. Inventive step

4.1 D4 discloses a clamp device for holding sheet metal elements having a specific geometry (page 1, lines 1-4). This clamp device comprises a structure (8) for supporting the sheet metal to be welded. This structure (8) corresponds to the first supporting element (5) in the patent in suit wherein this element is specified as a plate. The structure (8) of D4 has three arms, one arm (8a) for connecting the structure (8) to the fixed supporting part (6), one arm (8c) for connecting the structure (8) to the "head" of the clamp device (T) and one arm (8b) for the support of the sheet metal element to be clamped. Arm (8a) comprises guiding noses (Figure 3) for cooperation with the guiding surfaces on the supporting beam (6) allowing vertical guided movement. The screws in the holes (9) are arranged in a plane parallel to the axis of rotation of the clamping device and connect the structure (8) to the supporting beam (6). The supporting beam (6) having a corresponding part in the patent in suit in the supporting structure (7) with a vertical wall (7a) is disclosed as having a rectangular box form profile. Horizontal adjustment of the three armed structure (8) is possible by adding or taking out adjustment plates (shims) located between arm (8a) and beam (6).

4.1.1 As regards the argument of the respondents that the plate (5) specified in claim 1 had an equivalent in the structure (8) of D4 and therefore, the features of the characterising part were partly known from D4 and should be transferred to the preamble, the Board is of the opinion that functionally the structure (8)

corresponds in part to the plate (5), but it clearly does not represent a plate.

The structure (8) in D4 is neither flat nor thin nor plane but is disclosed as a three-dimensional structure having three arms. Such a three-dimensional structure does not fall under the term "plate".

A definition of the term "plate" in the specification is not necessary since this is a term used in a technical context where it has a meaning which is clear to the skilled person. The skilled person understands the term "plate" as relating to a structure with two flat surfaces and the thickness of the structure being minor in relation to the length and width. A plate is thus usually defined as being a flat, thin, plane structure. This definition is applicable to the plate (5) as illustrated in Figures 2, 3 and 4 of the patent in suit and not to the support structure of D4.

The features referred to in claim 1 with respect to the plate (5) are therefore correctly placed in the characterising portion and accordingly the features of the characterising portion distinguish the subject-matter of claim 1 from the subject-matter disclosed in D4.

- 4.2 One problem addressed in D4 is to provide a clamp device which allows an adjustment of the clamp with respect to the support beam during use (page 2, lines 19,20). Adjustment in the horizontal and vertical directions in a plane perpendicular to the axes of rotation of the movable part of the clamp can be carried out by undoing the screws (9, 9'), moving the

structure (8) up and down (in a vertical direction) by means of the screw (10), taking out or adding adjustment plates (in horizontal direction, shims (11)) and, after the structure (8) with the corresponding sheet metal to be welded is in its desired position, by fastening the screws (9, 9') again.

4.3 Starting from this state of the art, the object of the invention is to provide a device which can be adjusted to the sheet metal structure to be welded in a simplified manner.

4.4 The above defined technical problem is solved by the device defined in claim 1, which allows

- changing the position of the plate (5) simultaneously in two orthogonal directions;
- providing reliable support and registering movement of the structure to be welded both in the horizontal and vertical direction by a shaped profile of the upper edge of the plate (5).

4.5 D4 lacks any pointer to such modifications in particular in view of the independent adjustment by screw (10) and shims.

As regards the argument of the respondents that the distinguishing features (plane of the plate/screws and matching position of the sheet metal element/upper edge of supporting plate) solved two independent problems and thus, that a separate problem/solution approach should be applied to each correspondingly, the Board considers that there is indeed a functional relationship between these features. Considering the work-piece support in D4, it is to be noted that the

support area (8d) is generally flat so that adjustment in the horizontal direction by means of the shims is only necessary to define certain limits related to the horizontal position of the workpiece. However, in accordance with the device claimed in claim 1, the upper edge of the workpiece supporting plate is shaped so as to ensure shape-fitting contact between the workpiece and the plate and when adjusting the same accurate and simultaneous positioning of the workpiece is achieved with respect to the support structure, both horizontally and vertically. Accurate location of the workpiece in the horizontal and vertical directions is therefore made possible by the shape-fitting contact of workpiece and support plate.

- 4.5.1 As regards the argument that a holding device was known with an upper edge shape including a cavity with a bottom and two sides from the embodiment shown in Figure 5(A) of D5, respondent II failed to explain why the skilled person would combine this holding device with a clamping device of D4. D5 relates to a clamping device but, as far as adjustment of the workpiece supporting plate is concerned, it relies on a complex control system intended to vary the shape of the workpiece supporting surface. Adjustment of the support plate itself is not envisaged at all, let alone the adjustment specified in claim 1 under consideration. Respondent II further relied on Figure 2 in which two circles indicated a screwed connection of plate 17 to support structure 15. However, in accordance with the jurisprudence of the Boards of Appeal, the Board considers the argument speculative because no clear disclosure whatsoever of the connection between plate (17) and support (18) is derivable from D5 and by means

of the circles other connections such as welds or rivets could have been meant. Even if it was considered that a screwed connection was shown in D5, the use of the shaped plate instead of the support structure of D4 can only be based on hindsight because such replacement is not at all straight forward, because it requires ignoring of certain details, such as the vertical guiding mechanism of D4, which is functionally essential in that document.

- 4.6 Consequently the clamping device according to claim 1 involves an inventive step (Article 56 EPC). Therefore, this claim as well as its dependent claims 2 and 3 can form the basis for maintenance of the patent. Thus taking into account the amendments made by the appellant, the patent and the invention to which it relates meet the requirements of the EPC and the patent as amended is to be maintained in this form (Article 102(3) EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent with the following documents:
 - Claims 1 to 3 and columns 1 and 2 of the description as submitted during the oral proceedings before the Board;
 - Columns 3 and 4 as granted;
 - Figures 1 to 5 as filed with letter of 16 August 2004.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau