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**Datasheet for the decision
of 18 November 2008**

Case Number: T 0593/07 - 3.2.06

Application Number: 02425167.0

Publication Number: 1245317

IPC: B23C 5/06

Language of the proceedings: EN

Title of invention:

A process and apparatus for manufacturing products of defined thickness

Applicant:

JOBS S.p.A.

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 56, 84, 123(2)

RPBA Art. 13

Relevant legal provisions (EPC 1973):

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Keyword:

"Inventive step (main request) - no"

"Clarity (first auxiliary request) - no"

"Admission to proceedings (claims filed during oral proceedings) - no"

Decisions cited:

-

Catchword:

-



Case Number: T 0593/07 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 18 November 2008

Appellant: JOBS S.p.A.
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 20 November 2006
refusing European application No. 02425167.0
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P. Alting Van Geusau
Members: G. Kadner
K. Garnett

Summary of Facts and Submissions

- I. This appeal is from the decision of the Examining Division, posted on 20 November 2006, refusing European patent application No. 02 425 167.0 filed on 15 March 2002.
- II. In the decision under appeal the Examining Division considered that the method according to claim 1 and the apparatus according to claim 12 lacked an inventive step. The claimed solutions according to the independent claims were obvious in the light of the combination of documents:
- D2: US-A-3 811 163 and
D5: US-A-3 711 082
- III. The Appellant (Applicant) lodged an appeal, received at the EPO on 10 January 2007, against this decision and simultaneously paid an amount of €852.00 as the appeal fee, claiming a reduction of 20% according to Rule 6(3) EPC. The supplement of €213.00 to the appeal fee was paid on 24 January 2007. The statement setting out the grounds of appeal was filed on 26 March 2007.
- IV. In a communication dated 3 September 2008 the Board took the view that no procedural violation had occurred during the opposition proceedings, contrary to what was alleged by the Appellant. However, inventive step remained in doubt so that the appeal appeared likely to be dismissed.
- V. Oral proceedings were held on 18 November 2008.

The Appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request filed together with the grounds of appeal, alternatively the first auxiliary request filed on 17 October 2008, alternatively on the basis of the request filed during the oral proceedings.

Independent claims 1 and 12 of the main request read as follows:

- i. "1. A process for manufacturing products (2) of defined thickness used as parts (17) in aerospace structures, comprising at least the step of mechanically removing the material of which the product (2) is made at least from defined and separate areas (26, 27, 28) of the product in order to reduce the thickness of and thus lighten the product (2) characterised in that the process comprises the steps of:
providing a supporting frame (4);
providing a detachable part (20) of the supporting frame (4);
providing a matching shape for the product on a upper face of the detachable part;
positioning the product (2) on the upper face (21) of the detachable part (20).

12. An apparatus for manufacturing products (2) of defined thickness used as parts (17) in aerospace structures, comprising at least one tool (25) mounted on a tool holder head (8) that can move in space at least along three directions (X, Y, Z) that are perpendicular to each other, the tool (25) engaging with the product (2) in such a way as to remove the

material of which the product is made at least from defined and separate areas (26, 27, 28) of the product in order to reduce the thickness of and lighten the product (2), the apparatus being characterised in that it comprises a frame (4) which supports the product (2); the frame (4) comprising a detachable part (20) having an upper surface (21) constituting a matching shape for the product (2)."

- ii. Independent claims 1 and 9 of the auxiliary request read as follows:

"1. A process for manufacturing products (2) of defined thickness used as parts (17) in aerospace structures, the process being characterised in that it comprises at least the step of mechanically removing the material of which the product (2) is made at least from defined and separate areas (26, 27, 28) of the product in order to reduce the thickness of and thus lighten the product (2), wherein the step of removing the material is performed on a product (2) that is initially substantially flat and comprises a further step of plastically deforming the product (2) in order to give it the shape required to make the part (17) of the structure or wherein the step of removing the material is performed on a product (2) that is already plastically deformed in the shape required to make the part (17) of the structure, the process comprises the further step of positioning the product (2) on a supporting frame (4) that is shaped to match it and holding the product (2) in position on the frame (4) in contact with a face of the frame (4), forming the matching shape of the frame, the face (21) constituting

a reference system for the step of removing the material.

9. An apparatus for manufacturing products (2) of defined thickness used as parts (17) in aerospace structures, comprising at least one tool (25) mounted on a tool holder head (8) that can move in space at least along three directions (X, Y, Z) that are perpendicular to each other, the tool (25) engaging with the product (2) in such a way as to remove the material of which the product is made at least from defined and separate areas (26, 27, 28) of the product in order to reduce the thickness of and lighten the product (2), a frame (4) which supports the product (2) and which is shaped to match the product (2) in such a way as to hold the product (2) in a fixed position when it engages with the tool (25), wherein the supporting frame (4) is shaped to match the product (2) at least at its upper face (21) that engages with the product (2), characterised in that the upper face (21) of the frame (4) defines a reference system for driving the tool (25)."

iii. Independent claims 1 and 8 of the request filed during the oral proceedings read as follows (amendments with respect to claims 1 and 9 of the auxiliary request underlined):

"1. A process for manufacturing products (2) of defined thickness used as parts (17) in aerospace structures, the process being characterised in that it comprises at least the step of mechanically removing the material of which the product (2) is made at least

from defined and separate areas (26, 27, 28) of the product in order to reduce the thickness of and thus lighten the product (2), wherein the material is removed in quantities that are substantially inversely proportional to the level of stress that the different areas (26, 27, 28) of the product (2) are required to resist, wherein the step of removing the material is performed on a product (2) that is initially substantially flat and comprises a further step of plastically deforming the product (2) in order to give it the shape required to make the part (17) of the structure or wherein the step of removing the material is performed on a product (2) that is already plastically deformed in the shape required to make the part (17) of the structure, the process comprises the further step of positioning the product (2) with a given curvature on a supporting frame (4) that is shaped to match ~~it~~ the curvature of the product (2) and holding the product (2) in position on the frame (4) in contact with a face of the frame (4), forming the matching shape of the frame, the face (21) constituting a reference system for the step of removing the material, wherein the thickness of the material is continuously checked at any point of the product (2) by comparing the height of the material at that point with the previously reset reference zero dimension of the upper face (21) itself.

8. An apparatus for manufacturing products (2) of defined thickness used as parts (17) in aerospace structures, comprising at least one tool (25) mounted on a tool holder head (8) that can move in space at least along three directions (X, Y, Z) that are perpendicular to each other, the tool (25) engaging

with the product (2) in such a way as to remove the material of which the product is made at least from defined and separate areas (26, 27, 28) of the product in order to reduce the thickness of and lighten the product (2), wherein the material is removed in quantities that are substantially inversely proportional to the level of stress that the different areas (26, 27, 28) of the product (2) are required to resist, a frame (4) which supports the product (2) with a given curvature and which is shaped to match the curvature of the product (2) in such a way as to hold the product (2) in a fixed position when it engages with the tool (25), wherein the supporting frame (4) is shaped to match the curvature of the product (2) at least at its upper face (21) that engages with the product (2), and comprises a control unit (16), characterised in that the upper face (21) of the frame (4) defines a reference system for driving the tool (25), and the control unit (16) resets the dimension of the surface of the face (21) without the product (2) on it and uses this as the reference zero dimension, continuously checking the thickness of the material at any point on the product (2) by comparing the height of the material at that point with the previously reset reference zero dimension of the upper face (21) itself."

VI. In support of its request, the Appellant essentially made the following submissions:

The closest prior art was not D2, as held by the Opposition Division, but D4, which related to the manufacturing of products used as parts in aerospace structures. Starting from that state of the art, which

presented a complete solution to the problem of holding the part to be machined in position, the skilled person had no reason to look at D5, which dealt with a different problem. The fastener plate disclosed there was only suitable for holding different contoured parts in a plane by suction, but not for holding parts having a three-dimensional shape. Therefore the main request should be allowed.

The further amendments according to the auxiliary request were inventive because the person skilled in the art would not use the face of the supporting frame as a reference system for removing the material. This procedure was not usual in the art, and no indication was given in the prior art suggesting deviation from the usually set zero dimension relating to the machining apparatus.

The amendments made to the request filed during the oral proceedings should be admitted because they were supported by the description. The skilled person would clearly understand that the material to be removed was obviously dependent on the amount of stress to be resisted by the different areas. Furthermore, the skilled person having knowledge of the function of control units in such milling machines would clearly recognize that the setting of a zero dimension and comparing it with another dimension could only work by comparing it point by point.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request (Article 56 EPC)*

2.1 In its communication the Board expressed its opinion that the Examining Division's decision was correct.

2.2 In respect of the Appellant's argument concerning the closest prior art the Board comes to the conclusion that even if D4 is considered as the starting point, by combining it with D5 the skilled person is led to the subject-matter claimed.

2.3 Starting from D4 and regarding the elements for the fixing of the part to be machined, the problem to be solved can be seen in the improvement of its fixation during the step of mechanically removing material from defined areas of the product since the part is not fixed over its whole extent but only at the discrete points of the supporting elements 2,3.

2.4 D5 discloses an adequate solution to this problem in that the whole surface of the product is supported by the matching shape of detachable part 14 of the supporting frame 140 (Fig. 14). Thus applying the teaching of D5 to the known process and apparatus disclosed in D4 the skilled person is led to the process of claim 1 and the apparatus of claim 12.

2.5 The Appellant's argument, that the expression "contoured work piece holder" in D5 (col.7, line 43) means only that it matches up at the circumference of the work piece, cannot be accepted by the Board because in the following paragraph (lines 52-53) it is clearly stated that the matching shape is provided by the

contoured surface of the holder block 14 in the sense of having a three-dimensional shape.

3. *Auxiliary request (Article 84 EPC)*

3.1 Article 84 EPC requires that the claims shall define the matter for which protection is sought, and that the claims shall be clear and concise and be supported by the description.

3.2 Both independent claims 1 and 12 include the features of originally filed claim 9 according to which the face (21) constitutes a reference system for the step of removing material.

3.3 For the skilled person having general knowledge in metal working processes and machines, in particular in the numerical control of such work, it is a fundamental requirement to set a zero position for the X-, Y- and Z-directions within the three-dimensional space in order to control the movement of the tool in relation to the work piece.

3.4 The teaching of the claims requires that the face 21 of the frame 4 constitutes such a reference system. However, no embodiment is disclosed showing how this is done in practice. Although it might perhaps be clear to the skilled person how to set up a reference system for work pieces of relatively simple configuration for a machine as shown in Fig. 1 of the application in suit, the claims are not limited to such combination. Therefore, considering the broadness of the claimed subject-matter, the feature that the face of the work pieces constitutes a reference system for the step of

removing material independently of the work piece shape and machine at the very least lacks clarity. Thus the independent claims of the auxiliary request contravene Article 84 EPC.

4. *Main request filed during the oral proceedings*
(Article 123(2) EPC)

4.1 Amended claim 1 relating to a process includes the feature:

"comprises ... the further step of positioning the product (2) with a given curvature on a supporting frame (4) that is shaped to match ~~it~~ the curvature of the product (2)"

and amended claim 8 relating to an apparatus includes the corresponding feature:

"comprising ... a frame (4) which supports the product (2) with a given curvature and which is shaped to match the curvature of the product (2)"

4.2 These amendments to claim 1 and 8 are taken from the description relating to the specific embodiment shown in figures 1 and 3, particularly from paragraphs [0020], [0025], [0039]. However, the description of these embodiments includes more than the amendments which have been incorporated into the claims, e.g. a detailed description of the machine tool and the process by which it works.

4.3 Hence the amended features have been isolated from the specific process and apparatus as they are disclosed in the description with the consequence that protection is sought for subject-matters which are not originally disclosed in the form as now claimed. This constitutes

a violation of Article 123(2) EPC, and therefore the request cannot be admitted into the proceedings since it does not meet the formal requirements of the EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau