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**D E C I S I O N**  
**of 16 March 2006**

**Case Number:** T 0197/04 - 3.2.01

**Application Number:** 98305474.3

**Publication Number:** 0893179

**IPC:** B21J 15/02, B21J 15/26,  
B21J 15/28

**Language of the proceedings:** EN

**Title of invention:**  
Process for forming a punch rivet connection

**Patentee:**  
Newfrey LLC

**Opponent:**  
HENROB LIMITED

**Headword:**  
-

**Relevant legal provisions:**  
EPC Art. 56  
RPBA Art. 10b(3)

**Keyword:**  
"Inventive step - no"  
"Request to amend - refused"

**Decisions cited:**  
-

**Catchword:**  
-



Case Number: T 0197/04 - 3.2.01

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.01  
of 16 March 2006

**Appellant:** HENROB LIMITED  
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**Respondent:** Newfrey LLC  
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**Representative:** Haar, Lucas Heinz Jörn  
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**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
26 November 2003 concerning maintenance of  
European patent No. 0893179 in amended form.

**Composition of the Board:**

**Chairman:** S. Crane  
**Members:** J. Osborne  
C. Heath

## Summary of Facts and Submissions

I. The opponent's appeal is directed against the decision posted 26 November 2003 according to which it was found that, account being taken of the amendments made by the patent proprietor during the opposition proceedings, European patent No. 0 893 179 and the invention to which it relates meet the requirements of the EPC.

II. The following prior art documents filed during the opposition procedure played a role during the appeal proceedings:

D11: Lothar Budde et al., "Stanznieten ist zukunftsfruchtig in der Blechverarbeitung", Bänder Bleche Rohre, 5-1991, 94-100

D15: WO-A-95/08860.

III. In a communication pursuant to Article 11(1) RPBA the board indicated its provisional opinion that the closest prior art was known from D11 and that one relevant point in respect of inventive step related to the suitability of the actuator according to D15 for use in a punch-riveting machine. It set a time limit of one month before the date for the oral proceedings for the filing of any further requests or written submissions and reminded the parties of the provisions of Article 10b RPBA.

IV. On 22 February 2006 the appellant filed an additional document:

D30: Publicity brochure "Exlar Product specifications - GS Series Linear Actuators", together with a letter concerning its distribution.

V. During oral proceedings held on 16 March 2006 the appellant requested that the contested decision be set aside and the patent revoked. The respondent requested that the appeal be dismissed. Shortly before the board retired to deliberate on inventive step the respondent asked for the opportunity to file an amended request.

VI. Claim 1 as approved by the opposition division reads:

"Process for forming a punch rivet connection in which a plunger (4) and a holding-down device (5) are driven by a transmission unit (2) which converts a rotational movement of an electrically powered drive unit (1) into a translation movement of the plunger (4) and/or of the holding-down device (5), and the drive unit (1) is controlled by a control unit (9) receiving open and closed-loop control process data that are determined during the punch riveting process in the formation of the punch rivet connection."

VII. The appellant's submissions may be summarised as follows:

The amendments made to claim 1 during the opposition procedure do not satisfy the provision of Article 123(2) EPC. The amended wording states that the control unit receives open and closed-loop control data but does not

specify the source of this data. In the application as originally filed it was disclosed only that this data be supplied by the monitoring unit.

The contested decision and statements made by the patent proprietor during the opposition procedure imply that the closed-loop aspect of the subject-matter according to present claim 1 control process parameters during insertion of the rivet. This should distinguish the claimed subject-matter from the prior art in which the parameters are set in advance of beginning the process. However, the specification indicates only that the control parameters are used to deliver a statement of the quality of the riveted joint. There is no teaching to the skilled person as to how he might achieve control of the process during the insertion of the rivet, in contravention of the requirement of Article 83 EPC.

The closest prior art is that known from D11. In comparison with that disclosure the subject-matter of present claim 1 contains the feature of an electric drive unit and a transmission unit which converts rotational movement into a translational movement of the plunger. The problem to be solved is to permit better control of the riveting process. D11 already stresses the importance of controlling the riveting process and the skilled person would be aware that electrical drives have the benefit of superior control in comparison with hydraulic drives. He would therefore consider an actuator such as is disclosed in D15. Moreover, these drives are well known alternatives and the patent discloses no special effects achievable by the substitution. A punch-riveting process does not

imply any particular requirements as regards force since this is dependent on the materials to be riveted, which may be merely leather or plastic. Moreover, present claim 1 includes the possibility of only operating the holding-down device to retain the material in position during punching, which implies the application of a relatively low load.

VIII. The respondent replied essentially as follows:

The skilled person reading the original application would readily appreciate that the essential aspect is that the control unit receives open and closed-loop control data, not whether this has been transmitted by the monitoring unit.

Closed-loop control is well known to the skilled person. It is disclosed in the specification which parameters are to be measured and the skilled person would understand how these may be used to control the process. The more detailed explanation in the specification regarding the possibility of post-process analysis does not detract from the teaching to the skilled person regarding control during the process.

It has not been clearly demonstrated that the brochure D30 forms prior art within the meaning of Article 54 EPC and it therefore should be disregarded.

D11 is a complete teaching. It indicates that closed-loop control can bring benefits and proposes implementing this in combination with a hydraulic actuator. The skilled person need look no further for the improved working solution. By contrast, the

actuator according to D15 would require development in order to make it suitable as regards operating force, stroke length and speed. It would suffer from problems of friction and wear and would not apparently be as reliable as a hydraulic actuator. In particular, it is not clear that it could cope with its movement being blocked, as occurs in a punch-rivet machine.

Present claim 1 in one alternative relates to the possibility of driving both the punch and the holding-down device using a single actuator. In response to the appellant's filing of D30 the respondent should be given the opportunity to amend the claim to define only the specified alternative, even if the board follows the respondent's request to disregard this document.

## **Reasons for the Decision**

### *Procedural matters*

1. The appellant justifies the late filing of D30 by stating that it was filed in response to the point raised by the board in its communication concerning the suitability of the actuator according to D15 for use in a punch-rivet machine disclosed in D11. D30 nevertheless was filed after the time limit set by the board for the filing of further written submissions. Under these circumstances and since the board finds it to be not essential to the decision D30 is disregarded in accordance with Article 114(2) EPC.

2. At the opening of the oral proceedings the respondent confirmed its single request which had been filed in writing, to dismiss the appeal. In the course of the oral proceedings the respondent opposed the introduction of D30 and on the board's direction both parties presented their case in respect of inventive step in the light of only such evidence as was already in the proceedings. At the closure of the debate on inventive step the respondent asked for the opportunity to file an amended request having a claim 1 directed to a process in which the alternatives designated in the claim by "and/or" be deleted in order to specify that both the plunger and the hold-down unit are driven in the specified way.

2.1 This was the first time that any emphasis had been placed on this aspect of the claim. Throughout the opposition and appeal proceedings the respondent had argued on the basis that the form of the actuator was the essential element of its invention and at no time had it even made reference to the combination of features which would form the basis of the new request. The thrust of the teaching in the patent specification is also directed towards the aspect of the form of the actuator. Indeed, in column 5, lines 23 to 26 it is stated that whether merely the plunger or also the holding-down device is connected to the transmission unit depends on whether the joining device is used to form a punch-rivet connection with a solid or a hollow rivet. Under these circumstances neither the appellant nor the board could have been expected to anticipate such a change of direction. To shift the emphasis of the claimed subject-matter during the oral proceedings in the proposed manner would require continuation in

written proceedings to enable the appellant to reconsider its case.

- 2.2 Article 10b(3) RPBA states that "amendments sought to be made after oral proceedings have been arranged shall not be admitted if they raise issues which the Board or the other party ... cannot reasonably be expected to deal with without adjournment of the oral proceedings". This is clearly the situation in the present case and the respondent's request therefore cannot be admitted. Further consideration of the case is therefore based on claim 1 as approved by the opposition division.

*Amendment of the claim*

3. In comparison with its form as granted claim 1 has been amended by adding the following feature:
- the drive unit is controlled by a control unit receiving open and closed-loop control process data that are determined during the punch-riveting process in the formation of the punch-rivet connection.

The appellant finds this amendment objectionable in accordance with Articles 83 and 123(2) EPC. The board does not agree. The skilled person is well acquainted with the concept of open and closed-loop control and how to process data accordingly. Moreover, it is clear to the skilled person faced with the application as originally filed that it is essential merely that the data is received by the control unit, not whether it is transmitted by a monitoring unit or an alternatively designated unit. However, as set out below, the board

finds that the subject-matter of claim 1 even after amendment does not involve an inventive step. Under these circumstances it is not necessary to provide detailed reasoning in respect of the present objections.

*Inventive step*

4. The closest prior art is the disclosure contained in D11. This is a review of the technology relating to punch-riveting, covering both the machinery and such aspects as quality control. In respect of the latter D11 discloses not only open-loop control in order to act as a quality check but also suggests development to include closed-loop control to ensure reliable riveted connections without the need for quality procedures such as destructive testing. The only drive unit disclosed is a hydraulic cylinder. The respondent has not challenged the view taken by both the board and the appellant that the subject-matter of present claim 1 differs from that of D11 only by the feature of a transmission unit which converts a rotational movement of an electrically powered drive unit into a translation movement. The skilled person faced with the disclosure of D11 and attempting to put into effect its teaching regarding the improvements achievable by improved control arrangements would become aware that the use of closed-loop control with a hydraulic drive unit is complex and he would search for a possible alternative drive unit. In consultation with the person skilled in the practical aspects of control he would become aware of D15.

- 4.1 D15 relates to an electrically operated linear actuator. Under the heading "Background of the invention" D15 explains that computer control of hydraulic cylinders is achievable but involves substantial complexity whereas it is relatively simply achievable for electric motors. After stating that the use of an electric motor to generate hydraulic power is inefficient it goes on to state that "the trend has been to directly link the rotating output shaft of an electric motor to a mechanical device which converts the rotational motion into reciprocal or linear motion." Following an analysis of some prior art relating to electrically driven actuators D15 goes on to propose such a device which, in particular, offers precise positioning control. Indeed, large sections of the description relate to the application of closed-loop control to the operation of the actuator. The only application of such an actuator which is disclosed in D15 relates to the drive of a volumetric pump.
- 4.2 The introductory teaching of D15 regarding the general trend to replace hydraulic actuators by electrically operated actuators and the detailed disclosure regarding provision for closed-loop control would encourage the skilled person to employ an electrically operated actuator in order to facilitate his efforts to follow the teaching of D11. If the specifications of the particular actuator disclosed in D15 were not appropriate for operating a punch-riveting machine the skilled person would simply adapt the actuator according to his needs. There is nothing in either the specification of the contested patent or in the disclosure of D15 which indicates that such adaptation would not be wholly within the normal ability of the

skilled person. Indeed, the patent specification is totally silent regarding the specification of the actuator.

- 4.3 The board cannot agree with the respondent's argument that D11 is a complete teaching which leaves the skilled person without need to seek improvement. D11 explicitly states that closed-loop control offers potential for future development, thereby encouraging the skilled person to implement it in the best way possible. D11 is an overview of the punch-riveting process and, contrary to the respondent's view, does not propose implementing closed-loop control specifically with a hydraulic actuator. The disclosure of a hydraulic actuator is merely as part of a machine exemplifying the sensors used in connection with open-loop control for quality assessment. Closed-loop control, on the other hand, is discussed in the context of future developments to improve quality assurance. The board also cannot agree with the respondent's views concerning the need for development of the actuator according to D15. There is nothing to indicate to the skilled person that an actuator as disclosed in D15 would not be suitable for his purpose. The contested patent contains no details of any special requirements regarding the size or form of the actuator. This is true particularly in respect of the condition encountered in operating a punch-riveting machine, to which the respondent refers, of blocking the movement of the actuator. Moreover, it is implicit that the actuator's duty would vary greatly in dependence on the type and thickness of material to be joined. Even if an actuator according to D15 would not be immediately suitable for the particular application and so would

require development there is no evidence that this would extend beyond the general technical ability of the skilled person.

- 4.4 On the basis of the foregoing the board concludes that the subject-matter of present claim 1 does not involve an inventive step.

### **Order**

#### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

A. Vottner

S. Crane