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D E C I S I O N
of 16 December 1994

Case Number: T 0222/93 - 3.2.5

Application Number: 89904268.3

Publication Number: 0407443

IPC: B21D 5/16

Language of the proceedings: EN

Title of invention:
Bending apparatus

Applicant:
AB VOLVO

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - (yes)"

Decisions cited:
-

Catchword:

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0222/93 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 16 December 1994

Appellant: AB VOLVO
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Decision under appeal: **Decision of the Examining Division of the European Patent Office dated 5 October 1992 refusing European patent application No. 89 904 268 3 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: C. V. Payraudeau
Members: W. D. Weiß
H. P. Ostertag

Summary of Facts and Submissions

I. The Appellant (Applicant) lodged an appeal against the decision of the Examining Division on the refusal of the application No. 89 904 268.3.

The Examining Division had held that the application did not meet the requirements of Article 52(1) in conjunction with Article 56 EPC having regard to document

(D1) GB-A-1 075 663

and considering the design options which are at the disposal of a skilled person relying on general knowledge.

II. The Appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the Claims 1 and 2 filed by letter of 20 March 1992. The independent Claim 1 in this version reads as follows:

"1. Apparatus for bending a margin flange (4), which projects at an angle to a surface on a workpiece (3), against said surface, said apparatus including a preliminary bending tool (5), which is mounted on a first tool holder (7) carried by a linkage mechanism (8-13) for movement in relation to a stand (1), which is stationary in relation to a support surface (2) on which the workpiece (3) is placed, and further including a bend finishing tool (6), which is mounted on a second tool holder (14) carried by a parallelogram linkage mechanism (15-20) for movement in relation to the stand (1), and also including a drive arrangement (21-24) for driving the two tool holders (7,14), said drive arrangement including a single drive member (21) and a

drive link (28) which is connected between the parallelogram linkage mechanism (15-20) of the second tool holder (14) and the first tool holder (7), characterized in that the linkage mechanism between the first tool holder (7) and the stand (1) is a parallelogram linkage mechanism (8-13), which is arranged such that an imaginary connecting line between the stand-carried pivot axes (10,11) of the links extend substantially perpendicular to an imaginary connecting line between the stand-carried pivot axes (17,18) of the parallelogram linkage mechanism (15-20) of the second tool holder (14), and in that the drive member (21) is connected between the stand (1) and an arm, which is an extension of a link (16) in the parallelogram linkage mechanism (15-20) of the second tool holder (14), on the other side of the stand-carried pivot axis (18) of the link (16)."

III. The Appellant, in his Grounds of Appeal, points to the fact that the preliminary bending tool (17) of the bending apparatus disclosed in document (D1) changes its angular orientation with respect to the upstanding flange of the workpiece in dependence on the pivotal movement of the tool holder (15) with respect to the frame (1). This construction excludes the use of the known apparatus for bending margin flanges that are curved, a use which should be possible according to the present application (cf. original description, page 2, third paragraph). Moreover, the known apparatus is bulky in the vertical direction and allows only poor possibilities to adjust the force and the speed of the tools.

Reasons for the Decision

1. *Original Disclosure*

Claim 1 is based on the original Claim 1 and on the original description, page 4, the first two paragraphs.

Dependent Claim 2 is based on Figure 3 together with the corresponding original description on page 5, second paragraph.

Consequently, the claims are not subject to objections based on Article 123(2) EPC.

2. *Closest Prior Art and Novelty*

Document (D1) is the closest prior art. The bending apparatus disclosed therein comprises all the features in the first part but not those in the characterising portion of Claim 1.

Consequently, novelty is not to be objected.

3. *Technical Problem and Solution*

Starting from document D1 as closest prior art and following the submissions of the Appellant summarised in paragraph III. above, the technical problem to be solved by the subject-matter of the present application consists, hence, in constructing a compact bending apparatus which is flexibly adaptable to the requirements of various workpieces.

This problem is solved by the features in the characterising portion of Claim 1.

4. *Inventive Step*

4.1 Document (D1) does not mention at all that difficulties occurred, when curved work pieces had to be bend and that these difficulties could be overcome by replacing the pivoting link of the first tool holder disclosed in document (D1) by a parallelogram linkage of the type specified in Claim 1. Therefore on the basis of document (D1) only, there is no reason, why a person skilled in the art would apply this type of modification to the known apparatus, let alone why he would do so in combination with the particularly modified connection of the drive member.

Consequently, the disclosure of document (D1) alone does not justify the conclusion that the subject-matter of Claim 1 fails to involve an inventive step. The decision under appeal, therefore, has to be set aside.

4.2 The other documents cited in the Search Report have not yet been considered by the Examining Division, therefore, a remittal of the case for continuation of the examination would have been justified. However, in order to avoid further undue delay, the Board has exercised the power conferred to it by Article 111(1) EPC and continues the examination proceedings.

4.3 Only document DE-B-1 198 313 discloses a bending apparatus, the preliminary bending tool of which is carried on the holder of the finishing tool for a linear movement without changing its angular orientation with respect to the workpiece. The preliminary tool of this known apparatus, which - like the apparatus according to the present application - must have been apt to bend curved workpieces, is driven by its own driving jack.

This solution requires additional measures for synchronising the movements of the two tools and thus results in a rather complicated apparatus.

This drawback is avoided by the apparatus according to the present application wherein the second tool holder is carried by a parallelogram linkage mechanism for movement in relation to the stand. This measure allows the use one single drive member and avoids any synchronisation problems.

Moreover, the drive members of all the known devices are directly connected to the respective holders of the finishing tools. Thus these documents do not disclose nor suggest that another connection such as the one defined in Claim 1 should be chosen.

Consequently, neither document (D1) nor the other documents cited in the Search Report justify an objection on the basis of lack of inventive step to be raised against Claim 1.

5. Claim 1 and Claim 2 appended thereto are therefore allowable.

6. The description has still to be revised to meet the requirements of Rule 27 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the Examining Division with the order to grant a patent on the basis of the allowable Claims 1 and 2 filed by letter of 20 March 1992 and a description still to be adapted.

The Registrar: The Chairman

A. Townend C. Payraudeau