BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

A		B		C	X

File Number: T 511/91 - 3.2.1

Application No.: 87 300 969.0

Publication No.: 0 235 959

Title of invention: Tube assemblies

Classification: F16L 9/19

D E C I S I O N
of 28 January 1993

Applicant: Bundy (Telford) Limited

Headword:

EPC Article 54

Keyword: "Novelty (yes)" - "Remittal for further examination"

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 511/91 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 28 January 1993

Appellant : Bundy (Telford) Limited
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Representative : Watts, Peter Graham
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Decision under appeal : Decision of the Examining Division 2.3.11.118 of the European Patent Office dated 4 February 1991 refusing European patent application No. 87 300 969.0 pursuant to Article 97(1) EPC.

Composition of the Board :

Chairman : F. Gumbel
Members : S. Crane
J.-C. de Preter

Summary of Facts and Submissions

I. European patent application No. 87 300 969.0, filed on 4 February 1987, was refused by a decision of the Examination Division dated 4 February 1991.

The reasons given in the decision were that the subject-matter of the then valid Claim 1 lacked novelty, or in the alternative inventive step, with respect to the state of the art according to GB-A-1 160 508 (D1).

II. The Appellants (Applicants) filed an appeal against this decision on 28 March 1991 and paid the appeal fee on the same day.

The Statement of Grounds of Appeal was filed on 3 June 1991.

III. In a communication of the Board pursuant to Article 11(2) RPBA dated 18 September 1992 the Board indicated its provisional opinion that the state of the art according to WO-A-8 203 806 (D2) would have to be taken into account when evaluating the inventive step of the claimed subject-matter.

IV. Oral proceedings were held on 28 January 1993.

V. The Appellants requested that the impugned decision be set aside and a patent granted on the basis of Claim 1 as proposed in the Statement of Grounds of Appeal and the dependent claims, description and drawings as specified in the impugned decision.

This Claim 1 is worded as follows:

"A method of producing a tube assembly including a plurality of tubes having a common path over at least a portion of their lengths, characterised by the following steps:

a. assembling a plurality of straight lengths (11; 21) of tube in appropriate relationship relative to one another into an assembly of straight lengths of tube;

b. binding the assembly of tubes (11; 21) over the length that corresponds to the common path thereby clamping the tubes (11; 21) in juxtaposed relationship but slidable axially relative to one another; and

c. permanently deforming the bound portion of the assembled tubes (11; 21) to the required configuration of the common path by bending using bending equipment."

VI. The Arguments presented by the Appellants in support of their request can be summarised as follows:

Document D1 concerned the manufacture of a flexible pipe bundle cable in which the individual pipes were stranded together in a rope-like fashion before the cable entered an extruder unit which applied an outer plastics sheath. The individual lengths of pipe were therefore clearly not straight as required by Claim 1. Furthermore, no mention was made in document D1 of permanent deformation of the cable by bending.

Document D2 indeed related to the same field as that with which the claimed invention was particularly concerned, namely the production of hydraulic and/or fuel line assemblies for motor vehicles, and proposed, as did the

invention, bending a plurality of tubes as an assembly rather than individually, as was the traditional practice. There, however, the similarity ended. Since according to this prior art, the tubes of the assembly were only held together at one end, the forming tools of the bending equipment had to be specially formed to prevent lateral separation of the individual tubes of the assembly as this was bent. They could not however prevent the tubes splaying out at their free ends. Both the special form of the tools and the splaying out of the tubes would seriously make effective automation of the method described there very difficult. These problems were solved by the proposal of the invention to bind the assembly of tubes together over the length that was to undergo bending, the nature of the binding being nevertheless such as to allow relative sliding between the tubes, this being essential to achieve good bending results. It was surprising that binding the tubes together in this way was sufficient to prevent lateral separation of the tubes at the points of bending thus allowing the use of conventional automatic bending equipment rather than the special equipment disclosed in document D2.

The disclosure of document D1 could give no incentive to the skilled person to bind together the tubes of the assembly disclosed in document D2 since the technical fields involved were wholly different. This fact could be emphasised, if necessary, by the addition of a suitable restriction to Claim 1.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is therefore admissible.

2. In the manufacturing method disclosed in document D1 copper pipes are drawn from individual storage reels of a conventional stranding device and stranded together to form a cable. The cable is then passed through an annealing station and an extruder unit which applies a plastics sheath thereto. After cooling the completed cable is wound on a storage drum.

It is clear that in this method there is at no stage formed an assembly of straight lengths of tube as required by feature (a) of present Claim 1. Furthermore, the winding of the finished cable onto the storage drum does not constitute permanent deformation by bending equipment as required by feature (c) of the claim. The subject-matter of Claim 1 is accordingly novel with respect to document D1.

In the contested decision the Examining Division also argued, as an alternative to the objection of lack of novelty, that it would be obvious for the skilled man not to strand the pipes as disclosed in document D1 but simply to form them into a bundle in which they are straight and parallel. The Board cannot accept this view. It is clear that the purpose of the method disclosed in document D1 is to produce an extremely flexible pipe bundle cable, see page 1, lines 51 to 56. As the Appellants have convincingly shown, such flexibility can only be achieved by a stranded cable.

3. In the opinion of the Board, which is shared by the Appellants, the most relevant state of the art starting from which the inventive step of the claimed subject-matter has to be judged is that disclosed in document D2. This document was introduced into the examination

proceedings by the Appellants. Like the present application it relates in particular to the formation of an assembly of hydraulic lines for a vehicle, discusses in the same way as the present application the disadvantages associated with the traditional method of forming each tube individually, and proposes accordingly assembling together a number of straight lengths of tube and bending the assembly. The assembly of tubes may be clamped or otherwise fastened together at one end prior to bending, and then further clamped together along their common path during the bending operation, after the formation of each of a series of bends.

It is apparent therefore that this state of the art comprises both features (a) and (c) of present Claim 1 and that the sole distinguishing feature of the claim with respect thereto is feature (b).

The Examining Division has not yet considered the question of the inventive step of the subject-matter of present Claim 1 with respect to the most relevant state of the art disclosed in document D2. In order not to deprive the Appellants of the opportunity to argue this matter before two instances the Board has therefore decided by virtue of its powers under Article 111(1) EPC to remit the case to the Examining Division for further prosecution. In the course of this it would seem advisable to consider the necessity for a further search in what would appear to be the highly relevant field of bending metal rods and tubes, cf. main group B21D 7/00 of the International Patent Classification, where document D2 is classified.

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 for further examination.

The Registrar:

N. Maslin

The Chairman:

F. Gumbel