BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

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File No.: T 0699/91 - 3.2.4

Application No.: 87 308 860.3

Publication No.: 0 260 158

Classification: A01D 34/73

Title of invention: Cutting line for rotating string cutter devices

D E C I S I O N
of 21 May 1993

Applicant: Blount, Inc.

Proprietor of the patent: -

Opponent: -

Headword: -

EPC: Art. 56

Keyword: "Inventive step (no)" - "Closest prior art" - Problem to be solved"

Headnote
Catchwords

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 0699/91 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 21 May 1993

Appellant : Blount, Inc.
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Decision under appeal : Decision of the Examining Division of the European Patent Office dispatched on 15 April 1991 refusing European patent application No. 87 308 860.3 pursuant to Article 97(1) EPC.

Composition of the Board :

Chairman : C.A.J. Andries
Members : H.A. Berger
J.P.B. Seitz

Summary of Facts and Submissions

I. European patent application No. 87 308 860.3, filed on 6 October 1987 and published under the publication number 0 260 158, was refused by a decision of the first instance dispatched on 15 April 1991.

The decision was based on a first set of Claims 1 to 9 (main request) and on a second set of Claims 1 to 9 (auxiliary request) filed with the letter of 9 January 1991.

II. The reason given for the refusal was, with regard to Claim 1 of the main request, violation of Article 123(2) EPC and, with regard to the subject-matter of Claim 1 of the auxiliary request, lack of inventive step in comparison with the state of the art disclosed in document US-A-4 047 299 (D1).

III. An appeal was lodged against the decision on 12 June 1991, the appropriate fee was paid on the same date. The Statement of Grounds of appeal was submitted on 13 August 1991 with a new set of Claims 1 to 9.

Claim 1 reads as follows:

"A line for a rotating string cutter device, the line (22;50;60;70) having longitudinally extending edges (24,26,28,30,32,34; 50a-50f), characterised in that the edges are sharp edges separated by depressed regions (42,52), the depressed regions being substantially similar between each adjacent pair of the sharp edges, and each being depressed a distance which is sufficient for at least one of the sharp edges to be the first

portion of the line to strike an object to be cut regardless of the orientation of the line."

IV. In a communication the Board stated that it considered document D1 to be the closest state of the art document and cited document US-A-4 118 865 (D2) disclosing the use of a number of sharp edges for improving the cutting efficiency.

Oral proceedings took place on 21 May 1993 during which Claim 1 as filed with the Statement of Grounds was discussed.

The arguments brought forward by the Appellant are essentially as follows:

Document D1 does not disclose a "generally star-shaped" cross section as such. The words are merely explanatory of the shape that may be reached by application of what document D1 really teaches in column 5 lines 28-30, namely the provision of a "non-circular" shaped cross-section, "with longitudinal ribs". When the cutting line cross-section is claimed in D1 (Claim 2, column 6 lines 52-56) nothing is said about the cross-section being "generally star shaped". Document D1 is very clearly concerned only with providing a line of greater strength and rigidity. Consequently, the cross-sectional shape for the ribs as taught by D1 is that which would most conveniently enhance the strength and rigidity of the line. Document D1 therefore leads away from "sharp edges" because a rib with a sharp edge would not most conveniently enhance strength and rigidity. Within the technological field with which the invention is concerned, the idea of providing longitudinal ribs with sharp edges was entirely lacking until the present

inventor conceived it. Some ten years elapsed between publication of document D1 and the priority date of the present application. If it had really been obvious to sharpen the longitudinal ribs of document D1 it would not have taken ten years for this step to have been taken, in spite of continued and growing interest in the type of trimming apparatus.

Since document D2 deals in general with improvement of cutting (see column 4, lines 23 to 27), the Appellant considers the state of the art described therein to be more relevant than that described in document D1. A skilled man dealing with the problem of improving cutting would consider documents (e.g. D2) which deal with this problem and not documents which deal with the improvement of rigidity (e.g. D1).

V. The Appellant requested that the decision under appeal be set aside and a patent be granted on the basis of Claims 1 to 9 filed with letter dated 13 August 1991.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rule 64 EPC. It is admissible.

2. State of the Art

2.1 The Board considers document D1 as the most relevant state of the art document.

Document D1 describes an apparatus for trimming vegetation, i.e. a rotating string cutter device with a

line (7, 8) having longitudinally extending ribs (edges) (see Claim 2 of document D1).

With regard to this cutting line it is more specifically indicated in the description of document D1 (column 5, lines 25 to 60) that the line 7 "may be formed by extrusion and is preferably non-circular or non-round with longitudinal ribs, as for example a cross section that is generally star shaped. This provides greater strength and rigidity for lower mass in the line".

Notwithstanding the hint to strength and rigidity this part of the description is an unequivocal disclosure of a cutting line having a generally star shaped cross-section. Such a disclosure is not rendered invalid merely because it does not appear explicitly in the claims. Furthermore, the depiction of the cutting line in Fig. 6 (reference signs 7 and 8), although the end face of the line is very small, seems to confirm the provision of the generally star-shaped cutting line in the cutter device; at least, it does not point away from that generally star-shaped configuration.
Although the Board agrees with the Appellant that the general teaching of document D1 can be seen in the proposition to depart from the circular cross-sectional configuration, the Board cannot follow the Appellant when he disregards the unambiguous and specific teaching of the possibility of using a cutting line of generally star-shaped cross-section.

Due to the teaching in document D1 (column 5, line 29) that such a star-shaped configuration can be used, features implicitly contained in that teaching are also implicitly disclosed by document D1. One of these features implicitly defined by the statement "generally

star shaped cross-section" is the separation of the edges by depressed regions. Moreover, in the commonly known star shaped configuration the depressed regions between each adjacent pair of edges are substantially similar to each other. Indeed, no other particular star shaped configuration is described or shown in document D1.

Using a cutting line with a star-shaped cross-section, as is proposed in document D1, furthermore implies that at least one of the edges is always the first portion of the line to strike an object to be cut regardless of the orientation of the line. It is true that this last mentioned feature is not expressed in the general functional terms in document D1, as is done in Claim 1 of the application, however the specific and unambiguous disclosure of the star-shaped cross-section configuration in document D1 implies by its specific structure the same technical content, fulfilling the same cutting function and obtaining the same cutting result. While the Appellant may have clearly seen the advantage of the cross-sectional configuration and formulated the function of this configuration clearly, a different wording for the same technical content does not alter that technical content.

The Board accepts the argument of the Appellant that the edges of the star-shape of document D1 are not described as being sharp cutting edges.

2.2 The Board cannot agree with the Appellant that prior art document D2 is more relevant than document D1.

Document D2 describes cutting lines with a polygonal cross-section (see Claim 11 of D2) and with slicing edges

(see column 4, lines 26, 27). The slicing edges however are not separated by depressions.

Document D1, though stating that longitudinal ribs are provided for strength and rigidity purposes, discloses a cutting line with a star shaped configuration with cutting edges and depressions between the edges. Due to this specific form the result obtained by this cutting line of document D1 is similar to that which would be obtained by the line defined in a generalised functional way in the present Claim 1. Therefore, document D1 discloses more features common with those of the cutting line of present Claim 1 than document D2 so that document D1 must be regarded as the most relevant prior art document even though it does not expressly mention sharp slicing edges.

The argument that the problem to be solved, as defined in the present application as originally filed, was not disclosed in document D1, and that therefore, according to the Appellant, document D1 could not be considered as a starting point in assessing the inventive step, cannot be accepted by the Board, since the problem of improving cutting efficiency is a general problem with cutter devices and the skilled person would not exclude in this consideration the cutter device of document D1.

3. Technical problem to be solved

With respect to prior art document D1 which deals with a cutting line with longitudinally extending edges in order to provide additional stiffness and strength, the problem to be solved can be seen in the provision of a cutting line having an improved cutting characteristic.

4. Inventive step

4.1 The problem of improving cutting characteristics in cutting devices is generally known. The usual way to solve this problem is the provision of sharpened edges, as is furthermore known from document D2. Although document D1 deals with stiffness and strength of the cutting lines, it is obvious that the cutting efficiency of the star shaped configuration can easily be altered if necessary, by the use of sharpened edges.

4.2 The argument of the Appellant that the purpose of the edges of the cutting lines described in document D1 teaches away from the use of sharp edges cannot be accepted by the Board, since it is not clear why sharpened edges at the radial end of stiffening ribs would be detrimental to the stiffness and strength of the cutting lines. With regard to stiffness and rigidity it is more likely that a smooth connection between the edges in the depressed regions would be provided than blunt cutting edges.

4.3 The Appellant also claims that the time that elapsed between the publication date of document D1 (1977) and the priority date of the present application indicates that an inventive step was necessary to make the improvement claimed.

The Board is of the opinion, in accordance with the Decision T 109/82 (ABl EPA 1984, 473), that a long time factor cannot be the sole yardstick in deciding that inventive step is present. Such a conclusion would be admissible however if non-obviousness were supported by other concurrent factors. One such factor would be an

urgent need which had not been met over a long period of time.

An urgent need however was not proved by the Appellant and cannot be seen by the Board in the present case. The model which was shown to the Board by the Appellant during the oral proceedings was only an example of several possibilities disclosed in document D1, namely a cutting line provided with ribs.

5. For the above reasons the subject-matter according to Claim 1 does not involve an inventive step (Article 56 EPC) and Claim 1 cannot be allowed (Article 52(1) EPC).

Claims 2 to 9 fall with Claim 1.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

S. Fabiani C. Andries