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D E C I S I O N
of 19 June 2001

Case Number: T 0140/01 - 3.2.6

Application Number: 93307957.6

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Title of invention:
Punch-type cutter

Applicant:
OHYODO DIESEL CO., Ltd.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
T 0506/95

Catchword:
-



Case Number: T 0140/01 - 3.2.6

D E C I S I O N
of the Technical Board of Appeal 3.2.6
of 19 June 2001

Appellant: OHYODO DIESEL CO., Ltd.
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 27 June 2000
refusing European patent application
No. 93 307 957.6 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P. Alting van Geusau
Members: G. Pricolo
M. J. Vogel

Summary of Facts and Submissions

I. European patent application No. 93 307 957.6 published under No. 0 634 242 was refused by the Examining Division by decision dated 27 June 2000.

II. The Examining Division held that the subject-matter of claim 1 did not involve an inventive step in the light of the closest prior art disclosed in document

D1: DE-A-36 18 191,

when combined with the teaching of document

D2: FR-A-900 511.

III. On 25 August 2000 the Appellant (applicant) lodged an appeal against this decision and paid the prescribed appeal fee. The statement setting out the grounds of appeal was received on 27 October 2000.

IV. During a telephone call on 24 April 2001, the Rapporteur of the Board informed the Appellant that the closest prior art appeared to be represented by the following further document, cited in the European search report:

D4: WO-A-93/05923.

Furthermore, objections under Article 123(2), Rule 29(1) and Rule 27(1)(a) to (c) EPC were discussed.

V. With letter of 4 May 2001, the Appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the following documents:

Claims: 1 to 3 as filed with letter dated 4 May 2001;

Description: pages 1, 4 to 10 as originally filed, pages 2, 3, 11 as filed with letter of 4 May 2001;

Drawings: sheets 1/4 to 4/4 as originally filed

Claim 1 reads as follows:

"A punch-cutter comprising: a pair of jaw members (4,5) adapted to be opened and closed, about a pivot shaft (6), and with respective cutter blades (14,20), of substantially U-shaped, co-operatively inter-fitting, configuration, to produce a workpiece (25) cut-out portion (26), a jaw through hole (11) of substantially rectangular configuration in horizontal cross-section, for cut-out portion discharge, upon workpiece penetration and severance; characterised by a protrusion (23) upon one jaw, disposed within the jaw cutting blades, and extending to a point outwardly of the blade cutting plane, and locatable in the through hole of another jaw, the protrusion (23) comprising a series of blocks (22a-22c), of triangular cross-section, and wave-like longitudinal side profile, as an in-fill to the associated blade span, and being disposed, in relation to the cutter blades, to engage a prospective cut-out portion upon initial jaw closure, somewhat before workpiece blade contact, and progressively to deform the prospective cut-out portion, about workpiece blade contact, whilst still entrained with the workpiece; the through hole (11) having a flared exit mouth (18), to promote discharge therefrom of a pre-deformed cut-out portion, as a

discrete, unitary, element, upon severance from the workpiece, by co-operative blade interaction."

VI. In essence, the Appellant's arguments in support of the request are as follows:

Document D1, considered to be pertinent by the Examining Division, disclosed a concrete pulveriser, which relied upon disintegration of concrete material through percussion impact. Therefore D1 related to a different type of cutter when compared to a punch cutter of the type in accordance with the preamble of claim 1, requiring a discrete workpiece cut-out portion to be produced.

D2 merely concerned an ejector mechanism for a hollow punch cutter that did not require, nor allow for, workpiece deformation.

Both D1 and D2 relied upon tight tool interfit. There was no discharge issue with D1, since the workpiece was fragmented by pulverisation. So there were no reasons to apply the teaching of D2 to the concrete pulveriser of D1. Nor, even if there were, did D2 recommend a tapered exit tool mouth. Therefore D1, even taken in combination with D2, did not lead to the subject-matter of claim 1 in an obvious manner.

Reasons for the Decision

1. The appeal is admissible.
2. *Amendments*

2.1 Independent claim 1 comprises the features of originally filed claims 1 and 2. In addition to editorial amendments, the claim has been further amended by inclusion of features according to which the protrusion comprises a series of blocks and has a wave-like longitudinal profile, of features relating to the disposition of the protrusion in relation to the cutter blades, and of the feature according to which the through hole has a flaring mouth. Support for these added features can be found on page 8, lines 7 to 27, and on Figures 2 to 4 of the originally filed application.

2.2 Claims 2 and 3 essentially correspond to originally filed claims 3 and 4.

2.3 The description was amended to adapt it to the present claims.

2.4 In view of the above, the amendments to the application do not give rise to objections under Article 123(2) EPC.

3. *Novelty*

3.1 Document D4 discloses an apparatus according to the preamble of claim 1, namely a punch-cutter comprising: a pair of jaw members (12, 14) adapted to be opened and closed, about a pivot shaft (40), and with respective cutter blades (22, 24, 32, 34, 36), of substantially U-shaped, co-operatively inter-fitting, configuration, to produce a workpiece cut-out portion (see Figure 2), a jaw through hole of substantially rectangular configuration in horizontal cross-section (see page 4, lines 14, 15), for cut-out portion discharge, upon

workpiece penetration and severance.

The subject-matter of claim 1 is distinguished therefrom by the features of the characterizing portion.

- 3.2 Using the wording of claim 1, document D1 discloses (see Figures 1 to 3) an apparatus comprising the following features: a pair of jaw members (1, 2) adapted to be opened and closed, about a pivot shaft (10), and with respective cutter blades (Schneiden 3, 4, 5, 6; column 3, lines 20 and 28) of substantially U-shaped, co-operatively inter-fitting, configuration; a jaw through hole of substantially rectangular configuration in horizontal cross-section, a protrusion (Steg 16) upon one jaw (1), disposed within the jaw cutting blades, and extending to a point outwardly of the blade cutting plane, and locatable in the through hole of another jaw (2); wherein the protrusion (16) has a wave-like longitudinal side profile (column 3, lines 9, 10 and 16, 17; a saw-toothed profile is, generally speaking, a wave-like profile).

According to the disclosure of document D1, when the apparatus is in use, the cutting edge (7) of the protrusion (16) starts the breaking of concrete (Figure 2) before the blades (3) come into contact with the concrete. By means of the subsequent action of the blades (3), breaking of concrete is continued and cutting of the reinforcement is carried out as well (column 2, lines 10 to 22). Concrete parts (17) are eventually separated from the concrete structure and discharged (column 3, lines 40 to 48).

Since it has a cutting edge (7), the protrusion (16) is

neither suitable to progressively deform a prospective cut-out nor to produce a discrete workpiece cut-out portion: if the material is concrete, then it breaks, and if the material is e.g. metallic, then it is cut by the impact with edge 7.

In contrast thereto, claim 1 of the present patent application requires that the protrusion, in use, progressively deforms a prospective cut-out portion. This means that the protrusion of claim 1 must be provided with technical features making it suitable for that purpose (in particular, that it is shaped such as to avoid a cutting edge). These technical features are not present in the protrusion of document D1.

Moreover, in the apparatus known from D1, the protrusion does not comprise a series of blocks and the through hole does not have a flared exit mouth.

- 3.3 Document D2 discloses (see Figure 4) a punch-cutter comprising a cutting tool (punch) 4, and a matrix 7 in form of a through hole that has a flared exit mouth, to promote discharge therefrom of a cut-out portion, upon severance from the workpiece (page 2, lines 6 to 11). The workpiece is here made of metal, paper, plastics, etc. (page 1, lines 1 to 5).

The punch-cutter of D2 has neither jaws adapted to be opened and closed about a pivot shaft, nor a protrusion upon one jaw.

- 3.4 The remaining documents on file do not disclose a punch-cutter comprising a jaw with a protrusion. The subject-matter of claim 1 is, therefore, novel in the sense of Article 54 EPC.

4. *Inventive step*

4.1 It is the established case law of the Boards of Appeal (see e.g. T 506/95, not published in the OJ) that a document cannot qualify as the closest prior art to an invention merely because of structural similarities; it has to be that most suitable for the desired purpose of the invention.

The object underlying the claimed apparatus is to provide a simple and durable punch-type cutter for cutting and automatically discharging rectangular cut-out pieces (cf. the originally filed patent application, page 1, first paragraph and page 2, last line to page 3, line 2). The independent claim moreover specifies that a workpiece cut-out portion shall be obtained and discharged as a discrete, unitary element.

When considering the cited prior art documents, it is readily apparent that the prior art which is most suitable for this purpose is that of document D4. Indeed, the punch-cutter of document D4 is specifically designed to cut and automatically discharge rectangular cut-out pieces (see D4, page 4, lines 4 to 6), whilst document D1 is related exclusively to the use of the apparatus described therein as a pulveriser of reinforced concrete for breaking concrete.

Thus, the Board cannot follow the Examining Division when stating that document D1 constitutes the closest prior art, and comes to the conclusion that document D4 represents the closest prior art.

4.2 The subject-matter of claim 1 is distinguished from the punch-cutter of document D4 by the features of the

characterising portion:

a protrusion upon one jaw, disposed within the jaw cutting blades, and extending to a point outwardly of the blade cutting plane, and locatable in the through hole of another jaw, the protrusion comprising a series of blocks, of triangular cross-section, and wave-like longitudinal side profile, as an in-fill to the associated blade span, and being disposed, in relation to the cutter blades, to engage a prospective cut-out portion upon initial jaw closure, somewhat before workpiece blade contact, and progressively to deform the prospective cut-out portion, about workpiece blade contact, whilst still entrained with the workpiece; the through hole having a flared exit mouth, to promote discharge therefrom of a pre-deformed cut-out portion, as a discrete, unitary, element, upon severance from the workpiece, by co-operative blade interaction.

- 4.3 By means of the protrusion, the cut-out piece is deformed into a curved configuration with the apex thereof facing to the direction of discharge. This results in that reduced power is required to cut the workpiece and in that the cut-out piece is smoothly discharged (see originally filed patent application, page 2, last line - page 4, line 12 and page 9, last paragraph to page 10, penultimate paragraph). The flared exit mouth also contributes to the smooth discharge of cut-out pieces (see originally filed patent application, page 9, lines 15 to 17).

Therefore, the Board is satisfied that the claimed punch-cutter effectively solves the problem (see originally filed patent application, paragraph bridging pages 2 and 3) of providing a simple and durable punch-

type cutter for permitting automatic discharge of cut-out pieces from the cutter.

4.4 Since the purpose of the punch-cutter known from D4 is to cut and automatically discharge rectangular cut-out pieces, there is no reason for a skilled person to consider applying the teaching of document D1, consisting in providing a protrusion for breaking concrete, to the punch-cutter of D4.

4.5 The other documents on file do not lead the skilled person to the claimed solution, because none of them discloses or suggests a protrusion located upon one jaw.

4.6 It follows that the subject-matter of claim 1, and of claims 2 and 3 dependent therefrom, involves an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant a patent in the following version:

Description: pages 1, 4 to 10 as originally filed;
pages 2, 3, 11 filed with the letter of
4 May 2001.

Claims: 1 to 3 filed with the letter dated 4 May

2001.

Drawings: Sheets: 1/4 to 4/4 as originally filed.

The Registrar:

The Chairman:

V. Commare

P. Alting van Geusau