

BESCHWERDEKAMMERN
DES EUROPÄISCHEN
PATENTAMTS

BOARDS OF APPEAL OF
THE EUROPEAN PATENT
OFFICE

CHAMBRES DE RECOURS
DE L'OFFICE EUROPEEN
DES BREVETS

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen

D E C I S I O N
of 30 November 1994

Case Number: T 0674/91 - 3.2.3

Application Number: 84850079.9

Publication Number: 0122893

IPC: E21C 35/18

Language of the proceedings: EN

Title of invention:
Excavating tool

Patentee:
SANTRADE Ltd.

Opponents:
BETEK Bergbau- und Hartmetalltechnik K.H. Simon GmbH & Co., KG.
KENNAMETAL Inc.
GTE Service Corporation.

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Prior use"
"Inventive step (no)"

Decisions cited:
-

Catchword:
-



Case Number: T 0674/91 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 30 November 1994

Appellant:
(Proprietor of the patent) SANTRADE Ltd.
Alpenquai 12
P.O. Box 321
CH-6002 Luzern (CH)

Representative:
Lieke, Winfried, Dr.
Weber, Dieter, Dr.
Seiffert, Klaus, Dipl.-Phys.
Lieke, Winfried, Dr.
Postfach 61 45
D-65051 Wiesbaden (DE)

Respondents:
(Opponent I) BETEK Bergbau- und Hartmetalltechnik K.H.
Simon GmbH & Co. KG
Sulgener Strasse
D-78733 Aichhalden (DE)

Representative:
Vogel, Georg
Pat.-Ing. Georg Vogel
Hermann-Essig-Strasse 35
D-71701 Schwieberdingen (DE)

(Opponent II) KENNAMETAL Inc.
One Lloyd Avenue
Latrobe, Pa. 15650 (US)

Representative:
Schwepfing, Karl-Heinz, Dipl.-Ing.
Prinz & Partner
Manzingerweg 7
D-81241 München (DE)

(Opponent III)

GTE Service Corporation
100 Endicott St.
Danvers MA 01923 (US)

Representative:

Meyer-Plath, Henning, Dr.-Ing.
Maximilianstrasse 58
D-80538 München (DE)

Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office dated 11 July 1991 revoking
European patent No. 0 122 893 pursuant to
Article 102(1) EPC.**

Composition of the Board:

Chairman: C. T. Wilson
Members: J. du Pouget de Nadaillac
J.-C. Saisset

Summary of Facts and Submissions

I. The present appeal is directed against the decision of the Opposition Division dated 11 July 1991, which revokes the European patent No. 0 122 893 (based on European patent application No. 84 850 079.9) on the grounds that the subject-matter of Claims 1, 5 and 6, as granted, is not new in the light of the prior use referred to as D2 and that the subject-matter of Claims 2 and 3, as granted, do not involve an inventive step.

II. The Appellant (Patentee) filed the appeal on 2 September 1991 and paid the appeal fee on the same date. The Statement of Grounds was filed on 7 November 1991, accompanied by two sets of claims as first and second auxiliary requests.

Respondents I and II (Opponents I and II) contested the Appellant's arguments by their letters received on 27 December 1991 and 2 June 1992.

Respondent III (Opponent III) informed the Board by a letter received on 2 April 1992 that he does not wish to participate in the appeal proceedings.

III. In the appeal proceedings, the following citations remain relevant:

D1: SU-A-899 916 (accompanied by an English translation)
D4 concerning an alleged prior public use and comprising:

D4.1 - Declarations of several employees of AMT, a division of GT Products Co., Virginia (USA), made before the US Board of interference;

- D4.2 - Declaration of a manufacturer Kentucky Carbide, who made the alleged prior use carbide tips;
- D4.3 - Declaration dated 17 April 1990 of R. W. Ojanen, inventor of said alleged prior use carbide tip and also Construction Products Manager for AMT, responsible for the marketing of cutting tools;
- D4.4 - Drawings (Exhibits 1 to 4), including drawing No. T104-13 of the alleged prior use carbide tip, which was brazed on a cutting tool body No. AM722 (subject-matter of the US-B1-4 497 520, filed one month **after** the priority date of the present invention);
- D4.5 - A number of invoices, shipping tickets and purchase orders of different firms (Exhibits 8 to 44).

IV. The Board of Appeal, in a communication dated 11 June 1992, expressed its provisional view, that the subject-matter of Claim 1 according to both the main and first auxiliary requests appears not to be new having regard to the alleged prior public use D4, but that the subject-matter of Claim 1 of the second auxiliary request apparently is not suggested.

In response to this communication:

- the Appellant maintained his requests and filed an additional declaration of R. W. Ojanen dated 18 November 1992, and
- Respondents I and II contested that Claim 1 of the second auxiliary request implies an inventive step. Respondent II, moreover, filed on 13 October 1993 copies of inter alia:

D4.6 - a declaration of R. W. Ojanen, dated 20 July 1984

D4.7 - an affidavit of R. W. Ojanen, dated June 1986 (not signed)

- a response to the above 1982 declaration of Mr Ojanen, accompanied by documents (Exhibits 1 to 14) issued from litigations either in the United States or in front of the Swedish Patent Office between GTE Products (Respondent III) and Kennemetal Inc. (Respondent II).

The Appellant filed other documents on 19 October 1994, concerning another alleged prior use and document D1, inter alia a declaration of Mr. G. S. Genfan, the translator of said Russian document.

- V. Oral proceedings took place on 30 November 1994. Photos of the tool according to D4 were filed by the Respondents. Once the Board had decided that the alleged public prior use according to D4 did form part of the state of the art, the Appellant maintained the second auxiliary request as main request, withdrawing all other requests.

Claim 1 of the maintained request reads as follows:

"1. A rotatable tool for breaking or excavating hard material, such as asphalt, comprising a tool body (10) and a cutting insert (11) secured thereto, for instance by brazing, wherein the cutting insert (11) is formed with a generally conical tip portion (12) and provided with a shoulder (13) which is intended to rest against a supporting surface (14) on the tool body (10), and wherein an intermediate portion (17) of the cutting insert (11), located between said tip portion (12) and said shoulder (13), comprises a circumferentially extending concave portion (17'),
c h a r a c t e r i z e d in that the intermediate portion (17) comprises a generally cylindrical portion

(17") located adjacent to the tip portion (12), that the smallest diameter (d) of the concave portion (17') is smaller than a distance (a+b) from the axially forwardmost portion of the tip portion (12) to the radially outermost portion (19) of a rear contact surface (20) of the shoulder (13), and that a distance (a) from a transition (18) between the tip portion (12) and the intermediate portion (17) to the radially outermost portion (19) of the rear contact surface (20) of the shoulder (13) is larger than a distance (b) from said transition (18) to the axially forwardmost portion of the cutting tip (12), said contact surface being adapted to rest against an abutting surface (14) on the tool body (10)."

Claim 3, which is also an independent claim, reads as follows:

"3. A rotatable tool for breaking or excavating hard material, such as asphalt, comprising a tool body (10) and a cutting insert (11) secured thereto, for instance by brazing, wherein the cutting insert (11) is formed with a generally conical tip portion (12) and provided with a shoulder (13) which is intended to rest against a supporting surface (14) on the tool body (10), and wherein an intermediate portion (17) of the cutting insert (11), located between said tip portion (12) and said shoulder (13), comprises a circumferentially extending concave portion (17'),
c h a r a c t e r i z e d in that the diameter of said intermediate portion (17) is considerably smaller than the maximum diameter of the shoulder (13) over a substantial length of said intermediate portion so as to avoid significant increase of the cutting force during wear of the tip portion while simultaneously protecting the tool body (10) against premature abrasion, that the intermediate portion (17) comprises a

generally cylindrical portion (17") located adjacent to the tip portion (12), that the smallest diameter (d) of the concave portion (17') is smaller than a distance (a+b) from the axially forwardmost portion of the tip portion (12) to the radially outermost portion (19) of the rear contact surface (20) of the shoulder (13), and that a distance (a) from a transition (18) between the tip portion (12) and the intermediate portion (17) to the radially outermost portion (19) of the rear contact surface (20) of the shoulder (13) is larger than a distance (b) from said transition (18) to the axially forwardmost portion of the cutting tip (12), said contact surface being adapted to rest against an abutting surface (14) on the tool body (10)."

VI. The Appellant made essentially the following submissions:

(a) Regarding the alleged prior use according to documents D4:

(a.1) The documents provided by the Respondents cannot be considered as evidence:

- They are merely copies and not original documents;
- The stereotyped wording seen in many declarations indicates that these documents were formulated on behalf of one of the parties who may have asked in a particular way the undersigning persons for details which could be interpreted in his favour and, thus, give a wrong impression, as regards for instance the question of confidentiality or the public availability of the alleged prior use. For example, the statement that the firm GTE did not place any secrecy restriction on firm, which implies an explicit demand of this

firm, does not exclude that, in view of the circumstances, namely the tests to be conducted, a tacit agreement on confidentiality was existing.

- (a.2) The alleged public prior use was merely part of a test programm, which clearly does not make the tool available to the public.

The employees of the four firms, who were contacted by Mr Ojanen, all indicate in their declarations that the tools were **tested**. Testing normally occurs under confidential conditions, even though confidentiality may not have been discussed, and that is consequent with the fact that these persons were selected by Mr Ojanen, since he had already a good personal relationship with them.

Several tests are needed with different operating sites having different surface conditions. Knowing that a rotating cutting drum carries between about 40 to 300 or more cutter bits, it is not surprising that a total number of 5 000 or even 10 000 bits may be required. Compared to the total number of bits shipped during the two concerned months, this amount is only about 1% of the total number. That moreover the contractors paid for the tools is understandable, since the test samples were replacing other bits.

The tests were conducted on highways, which are not accessible to the public. The contractors had no interest in advertising these tests. Moreover, it is not possible to distinguish the features of the present invention on the whole mounted tool, since this tool is hidden by a shielding cover and the concave part of the cutting insert is completely

covered by an overflow of the braze material used to secure the insert to the tool body. Once the bits are used, it is no longer possible to see the inventive features.

(b) Inventive step

The present invention claims a cylindrical portion between the conical tip portion of the insert and its concave portion, contrary to the tool D4 which proposes only a concave intermediate part between the tip portion and the shoulders. Moreover, in D4, said concave intermediate part is very short. Due to this claimed cylindrical portion, the manufacturing of an insert according to the present invention is much easier and, further, the combination of the concave and cylindrical forms greatly reduces the needed cutting forces, which further remain constant over a large period of time. The diameter of the cutting insert remains constant during the entire life of the tool.

Document D1 cannot suggest such an improvement. This known insert is not part of a **rotatable** tool, as shown by the declaration of G. S. Genfan. Moreover, it is apparently made of two parts, namely an annular disc as shoulder, and a cylindrical insert, both parts being brazed together. The problem dealt within this prior art is to economise expensive hard metal and, only for this reason, a cylindrical form is chosen and a thin disc of wear resistant material is used to provide the shoulder. Thus, the subject-matter of this document is in contradiction with the present invention, which requires more material because of the more substantial concave intermediate part.

VII. The Respondents contested these submissions by arguing as follows:

The word "test" used in the declarations can have different meanings. There are tests, the object of which is to persuade the customer to buy the product, to bring him to such a decision. In the prior use according to D4, it seems to be the case, since Mr Ojanen has at least during a period of about two months visited at least five firms. About 13 000 inserts were purchased, all that without any obligation of secrecy. It is not seldom that people, who are above all commercial people and, thus, are interested in bringing a new product on the market as soon as possible, forget legal aspects, especially in the USA in which a one year grace period for prior use is recognised.

In the present case, moreover, it appears that on 21 March 1983 a tool was given to Mr Beach, who is a competitor. This certainly does not suggest any kind of confidentiality.

Even if an overflow of braze material covers the concave part, the photos clearly show the slight cylindrical form of the insert, compared with the usual conical tip of prior art inserts, so that merely by seeing the inserts the features of the present invention are known.

With the prior use according to D4, it is known to provide a tool with a concave portion between the conical tip and the shoulder. The Applicant has recognised that it is difficult to manufacture such a form. Thus, for the person skilled in the art, it is obvious to improve this form to allow an easier manufacturing and, therefore, to provide a cylindrical form. Such a form is, moreover, disclosed by document D1.

VII. The Appellant requested the contested decision to be set aside and the patent maintained on the basis of the claims enclosed as appendix 6 in the grounds of appeal filed on 11 November 1991.

The Respondents requested the appeal to be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. Claim 1 is a combination of Claims 1, 2, 3 and 4 as granted, and Claim 2 corresponds to the granted Claim 5. Thus, the requirements of Article 123(2) and (3) are fulfilled.
3. *Prior use according to D4 as part of the state of the art*
 - 3.1 According to the practice of the Boards of Appeal, affidavit or statutory declarations whether in original or copy form are considered as possible means for providing evidence. Since one object of such form of evidence is to avoid the hearing as witness of the undersigning person, it seems to be superfluous to confirm the context of these statements by the hearing of the concerned persons, as suggested by the Appellant. It is also clear that, most of the time, these kinds of statements are produced from answers given to questions formulated by legal experts, so that it is not surprising to find between a few declarations the same stereotyped formulations.

The Board of Appeal has not to check the signatures of the undersigning persons, as long as counterevaluations

concerning the signatures are not provided. It is to be noticed in this respect, that the Respondent II in this grounds of opposition (letter dated 8 November 1989, page 4) had shown his willingness to provide original sworn declarations, and that, at this time, no corresponding request was made by the Appellant, so that his request to determine which documents carry original signatures which was prosecuted at a very late stage of the appeal proceedings had to be rejected.

3.2 Subject-matter of the prior use

Mr Ojanen states in his affidavit dated 17 April 1990 that, working in the Research Development department of GTE Products Co., he has designed in the year 1982 a new carbide tip or insert for mining tools used for breaking hard material like asphalt. This cutting tool is the subject-matter of both US-patent No. 4 497 520 and the sketch referenced as Exhibit 3 (drawing No. T104-13, dated 30 November 1982).

This insert comprises a general conical tip portion and is provided with a shoulder which is intended to rest against a supporting surface on the tool body. Starting from the shoulder and ending at the base of the conical tip portion is a circumferentially extending concave portion as intermediate portion. All the dimension requirements mentioned in the above given Claims 1 and 2 of the present invention are fulfilled by this drawn insert.

According to the above-mentioned affidavit, production of the corresponding inserts began at the end of 1982 and the inserts were made in different carbide grades and brazed onto tool bodies (Exhibit 6, drawing AM722M); the tool bits thereby realized were designated as AM722RB or RF, depending on the different carbide

grades. These tool bits can be rotatably mounted in a tool holder of an excavating machine. During use, each tool rotates and thus is self-sharpening.

3.3 Kind of test in question

From the beginning of January 1983 until the 23 March 1983, which is the priority date of the patent in suit, Mr Ojanen visited at least four or five firms on job sites located in an entire region covering different states, namely Kentucky, Louisiana and Florida. This fact is not disputed, nor the fact that during this period of time at least 10 000 tools were purchased.

What is mainly in question is the type of tests mentioned in all affidavits or declarations and presented by the Appellant as parts of an experimental testing program, the purchase of tools being merely considered as a consequence of this program, since the used new tools in anyway were replacing other kinds of tools.

However, having regard to all declarations, the following is observed:

- In his affidavit dated 20 July 1984, that is to say only one year after his concerned activities, Mr Ojanen states:

"Since my tool was introduced during the first quarter of 1983, it's **market** share has gone from no percent of the market to about 18% of the market. I believe this dramatic increase in **sales** is due...".

- According to his affidavit dated 17 April 1990, he discussed testing of the AM722 tool bit with Mid. Cumberland Co. on two different construction

sites and, then, the tests were conducted on or about 17 January and 1 February 1983. Mr Ojanen stated that afterwards, namely on 4 February 1983, Mid. Cumberland Co. issued a Purchase order No. 2083 for 5 311 tool bits, followed by further orders in March concerning another 10 000 tools. According to a declaration of G. R. Cantrel, a joint owner of Mid. Cumberland Co, dated 29 May 1987, this man issued himself the purchase orders and that without any obligation of confidentiality. "Tests" are no longer mentioned. Mr Ojanen indicated that, during the same time period, he visited other firms in order "to persuade (them) to try out my new tool and purchase it. As a result I sold...". In his affidavit dated 8 November 1992, thus about ten years after the facts, Mr Ojanen mentioned as "experimental testing program", although this expression had never been used in his previous declarations as affidavits, and was quite silent about the sales.

- The managers or owners of all visited firms certify in their declarations that they were approached by Mr Ojanen "for the purpose of selling", that they "test his new tool without any obligation of confidentiality in order to evaluate them for purchase" and that, very pleased with the obtained results, they purchased a quantity of tools.

All these assertions coming from different witnesses of the alleged prior use and being in agreement with one another already provided sufficient evidence of the commercial nature of the mentioned tests. The number of firms contacted, the clear correlation between tests and purchase orders or sales speak clearly in favour of tests, which were mainly offered to demonstrate the product and persuade the customers to take the decision

to purchase the tools. Even if a drum of an excavating machine needs about 400 carbide tips and if tests were wished on different hard materials, a number of more than 10 000 tools purchased by a single company goes far beyond a mere need for tests. Furthermore, the prospective buying firms had no commercial interest in keeping the design of the new tools confidential and good personal relationship with Mr Ojanen cannot be considered as sufficient grounds to make it clear that tests had to occur under confidential conditions, especially when Mr Ojanen himself had not explicitly asked for this.

Entirely consistent with this opinion is the fact that on 21 March 1983 an employee of Dykes Paving Co., one of the visited firms, gave Mr Beach of Kennemetal Inc., which is a competitor of GTE Products Co., a tool which had been given to him by Mr Ojanen a few days before (see Exhibits 8 and 9 of the papers filed on 13 October 1993). Thus, under such circumstances, an obligation of confidentiality cannot have existed, since the access to the new tool was not restricted to a particular group of persons.

3.4 Recognition of the tool features

Sales of a product per se usually makes the product available to the public, when without undue burden the essential features of the product can be recognised. The photos filed by the Respondents during the oral proceedings, even being five times enlarged, show that the overflow of braze material which secures the cutting insert to the tool body does not hide at least the upper part of the intermediate concave portion. Moreover, Mr Ojanen has in the course of the litigation in the US between GTE Products Co. and Kennemetal Inc. emphasised that the customers were at first sight frightened by the

narrowness of the tip, so that it is clear that their attention was immediately drawn to the form of the insert. Someone having such a tool can dismantle the insert tip from the tool body and thereby recognise the essential features of the insert.

Thus, the period of use, the kind of use, namely unconditional sales and delivery of the tool, and the availability to the public are supported by all documents D4. It follows that the GTE prior use is prior art in the sense of Article 54(2) EPC.

4. *Novelty and Inventive step*

4.1 Novelty

The GTE prior use constitutes the closest prior art. The subject-matter of Claim 1 differs from this prior art in that the intermediate portion of the cutting insert comprises a generally cylindrical portion adjacent the tip portion.

Independent Claim 3 contains the additional feature that the diameter of said intermediate portion is considerably smaller than the maximum diameter of the shoulder over a substantial length of said intermediate portion. However, in drawing T104-13 of document D4, the diameter of the intermediate concave portion, when reaching the tip portion, is substantially smaller than the diameter of the shoulder, so that, when it is followed by a cylindrical portion, necessarily the diameter of this cylindrical intermediate portion corresponds to this small diameter.

4.2 Inventive step

According to the Appellant, the cutting insert known from document D4 requires low cutting forces but its concave portion brings difficulties in manufacturing. The present invention by providing the additional cylindrical portion, facilitates the production of the tool and, further reduces once more the needed cutting forces. Moreover, the shape of the tool remains the same during use, so that a longer lifetime is reached. The underlying technical problem to be solved by the patent in suit is therefore to be seen in the improvement of the tool disclosed by the prior use D4, so that this tool is easier to be manufactured and requires lower cutting forces.

When looking for a solution to these problems the skilled person would, in the opinion of the Board, immediately realise that a cylindrical shape along at least a part of the intermediate portion would lower the coefficient of friction of the tool with the material to be broken during working and it is also clear for him that such a shape followed by a reduced concave portion is easier to manufacture than a whole concave portion of same length. The solution of the present invention is therefore nothing more than a logical step for a person skilled in the art faced with the problems set above.

Moreover, the claimed solution can be derived from document D1. This prior art aims at saving expensive hard metal and teaches an insert, which comprises a cylindrical intermediate portion between its conical tip and shoulder. The person skilled in the art receives consequently from this prior art document the teaching that expensive hard material can be economised by providing an intermediate cylindrical portion. Having in view the same object for the tool disclosed in D4 and

which comprises a substantial concave intermediate portion, the skilled person by applying this teaching reaches the subject-matter of Claim 1 and, consequently, as seen above in point 4.1, the one of Claim 3. Having regard to the problem to be solved, it is of no importance whether the tool according to document D1 is rotatable or not.

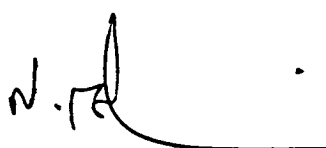
4.3 For these reasons, Claim 1 as well as Claim 3 lack an inventive step and are therefore not allowable. Claim 2 is dependent on Claim 1 and, thus, must share the fate of this claim.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:



N. Maslin

The Chairman:



C. T. Wilson