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**D E C I S I O N**  
**of 8 September 2005**

**Case Number:** T 0324/03 - 3.2.6

**Application Number:** 94850184.6

**Publication Number:** 654317

**IPC:** B23B 27/14

**Language of the proceedings:** EN

**Title of invention:**  
Cutting tool insert

**Patentee:**  
SANDVIK AKTIEBOLAG

**Opponent:**  
Hartmetall-Werkzeugfabrik Paul Horn GmbH

**Headword:**

-

**Relevant legal provisions:**  
EPC Art. 54(2), 56, 117(1)  
EPC R. 55(c)

**Keyword:**  
"Opposition - admissible"  
"Novelty (yes)"  
"Inventive step (yes)"  
"Hearing of witnesses (no)"

**Decisions cited:**  
G 0003/97, G 0007/95, T 0522/94, T 0328/87, T 0102/97,  
T 0204/91

**Catchword:**

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Case Number: T 0324/03 - 3.2.6

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.6  
of 8 September 2005

**Appellant:** Hartmetall-Werkzeugfabrik Paul Horn GmbH  
(Opponent) Unter dem Holz 33-35  
D-72027 Tübingen (DE)

**Representative:** Bartels & Partner  
Lange Strasse 51  
D-70174 Stuttgart (DE)

**Respondent:** SANDVIK AKTIEBOLAG  
(Proprietor of the patent) S-81181 Sandviken (SE)

**Representative:** Taquist, Henrik Lennart Emanuel  
Sandvik AB Patents & Licences Fack  
S-81181 Sandviken 1 (SE)

**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 17 January 2003  
rejecting the opposition filed against European  
patent No. 654317 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** P. Alting van Geusau  
**Members:** G. Pricolo  
R. T. Menapace

## Summary of Facts and Submissions

- I. The appeal is from the decision of the Opposition Division posted on 17 January 2003 to reject the opposition filed against European patent No. 0 654 317, granted in respect of European patent application No. 94850184.6.

The sole claim of the patent as granted reads as follows:

"An edge rounded cutting tool insert comprising at least one main cutting edge (2), a connecting nose area (5), a rake face (3) and a clearance face, the main cutting edge (2) having a width W of edge rounding along the rake face and a width H of edge rounding along the clearance face, a W/H ratio in the nose area being at least 1.25 times larger than the W/H ratio in the middle of the main cutting edge (2), the H in the middle of the main cutting edge (2) being at least 1.1 times larger than the H in the nose area (5) characterized in that, the W/H in the middle of the main cutting edge (2) is 1.0 to 1.6, and the W/H in the nose area (5) is 1.5 to 2.3."

- II. The opposition was based solely on grounds of prior use of cutting tool inserts of the type 229 manufactured by the opponent, allegedly having the features shown in:

D7: Catalogue of Hartmetall-Werkzeugfabrik Paul Horn GmbH, July 1989; and

D8: Drawings of cutting inserts.

The opponent nominated three witnesses to certify that cutting inserts of the type 229 according to D7 and D8 were made available to the public by offering them for sale.

III. The Opposition Division held that the opposition was admissible and that the claimed subject-matter was novel and involved an inventive step, because none of the documents cited during the opposition proceedings disclosed or suggested the characterizing feature of the claim. In coming to its decision, the Opposition Division considered, in respect of document D8 relating to the alleged prior use, that *"taking measurements from drawings, in contrast to reading given values from the drawings, must not be considered as valid evidence as not only when the drawing is made but also when taking the measurements considerable accuracy cannot be avoided"*. Furthermore, the opponent did not take into consideration the side relief of the insert when measuring W and H in the drawings of D8 and therefore the values measured did not correspond to those of W and H measured in accordance with the method according to the patent in suit, namely along the extension of the rake and flank faces. Anyway, if measurements were taken from D8, then for the main cutting edge reference should be made to detail X, not to cut B-B as argued by the opponent, in which case the measured ratio W/H was outside the claimed range.

IV. The appellant (opponent) lodged an appeal against this decision, received at the EPO by fax on 12 March 2003, and simultaneously paid the appeal fee. The statement setting out the grounds of appeal was received at the EPO on 14 May 2003.

V. Oral proceedings took place on 8 September 2005.

The appellant requested that the witnesses offered in the notice of opposition be heard on the question of whether the technical content of documents D7 and D8 and the related inserts were made available to the public before the priority date of the patent in suit, that the decision under appeal be set aside, and that the patent be revoked. During the oral proceedings the appellant further referred to the following document cited during the opposition proceedings:

D13: US-A-4 643 620.

The respondent (patentee) requested that the appeal be dismissed or that the patent be maintained on the basis of the auxiliary requests 1 to 5 filed during the oral proceedings before the Board.

VI. The submissions of the appellant can be summarised as follows:

With its arguments concerning the admissibility of the opposition, the respondent was questioning whether the evidence submitted by the opponent was appropriate proof of what it was alleging. However, this question belonged to the substantive examination of the merits of the opposition rather than to the question of its admissibility.

The object of the prior use was an insert of the type 229 as shown in D7. In support of the fact that such inserts were made available to the public before the

priority date of the patent in suit, witnesses had been nominated in the notice of opposition and an invoice was filed during the opposition proceedings. The prior used inserts had the features derivable from D8, which was a drawing made after the priority date of the patent in suit but which reflected the profiles and dimensions of the type 229 inserts made available to the public before that date. This could be confirmed by the witnesses. The values of the width W of edge rounding along the rake face and of the width H of edge rounding along the clearance face had been derived directly from D8, by taking measurements in magnified drawing details of cuts A-A, B-B, and in view X. At the time at which the inserts became available to the public, such measurements could not be taken directly from the insert with sufficient precision since the necessary measuring techniques were not available in the appellant's premises. However, the profiles shown in the drawing D8, which was intended for distribution to clients, were sufficiently precise for such measurements. Moreover, errors in measurements of W and H in D8 were counterbalanced by the fact that these could anyway only be determined with large approximation, since the patent in suit did not disclose any specific method for their measurement either. In particular, the disclosure of the patent in suit was insufficient in respect of how to determine the widths W and H when the insert surfaces were inclined. Thus, the patent in suit did not meet the requirements of Article 83 EPC. As regards the issue of whether the main cutting edge was that shown in view X or cut B-B of D8, it was in fact irrelevant, because the distinction between main and secondary cutting edge depended on the particular cutting operation being

carried out. Moreover, in both cases the measured values of W and H were such that the requirements of the patent claim were met. Furthermore, the edges of the prior used inserts were rounded by a brushing operation which was carried out manually. This resulted in different amounts of edge rounding from one insert to the other. Considering that the inserts had been produced in large numbers, and that the different amounts of edge rounding were statistically distributed within usual large tolerance ranges, it was unavoidable that some of the inserts produced effectively had cutting edges which were rounded such as to provide values of W and H in accordance with the claim of the patent in suit. Also for this reason the subject-matter of the claim lacked novelty.

In any case, starting from an insert according to D8, the claimed subject-matter was rendered obvious by the teaching of D13 to provide, in the middle of the main cutting edge of a cutting insert, values of W and H which ratio W/H was in the corresponding range claimed. Since it was directly derivable from D8 that the ratio W/H in the nose area should be different from that in the middle of the main cutting edge, the skilled person transferring the teaching of D13 to the insert of D8 would directly provide the nose cutting area with a ratio W/H falling within the different range claimed for the nose area, thereby arriving at the claimed subject-matter in an obvious manner.

VII. The respondent relied essentially on the following submissions:

In the notice of opposition the opponent argued solely concerning patentability of the single claim of the patent in suit on the basis of the alleged prior use of an insert of the type 229 having the features shown in D7 and D8. However, no proof was filed within the opposition period to support the inter-correlation of D7 and D8, or the fact that the products of D7 were put on the market before the relevant date of the patent in suit, and the fact that the W/H ratio defined in the claim of the patent in suit could be considered properly proven by D8. Since document D7 was provided with a date on its first page only, the date of publication of the subsequent pages could not be determined. Furthermore, no witness was offered to explain how the drawing D8 was produced. Since in accordance with the established case law of the Boards of Appeal, in case of an opposition based solely on grounds of prior use, all the elements necessary for establishing whether a prior use effectively took place should be established within the opposition period, the opposition was inadmissible.

D8 represented no evidence of the exact nature of any possible edge rounding features of inserts of the type 229 manufactured by the opponent. Measurements of W and H taken from the drawings were speculative. Even if, as argued by the appellant, some of the inserts of the type 229 were provided with values of W and H in accordance with claim 1 of the patent in suit because of the large variations of the amounts of edge rounding obtained by manual brushing, then these inserts would fall under the scope of claim 1 only by chance and would thus constitute an accidental disclosure not opposable to the novelty of the claimed subject-matter.



The combination of the insert of the type 229 and D13 would not lead to the claimed subject-matter because D13 was silent about any features of edge rounding in the nose area.

## **Reasons for the Decision**

1. The appeal is admissible.
2. *Admissibility of the opposition*
  - 2.1 According to the established case law of the Boards of Appeal (see in particular T 522/94 and T 328/87, relied upon by the appellant), when an opposition is based on grounds of prior use as in the present case, the requirements of Rule 55(c) EPC are only fulfilled if the notice of opposition indicates, within the opposition period, all the facts which make it possible to determine the date of prior use, what has been used, and the circumstances relating to the alleged use. The notice of opposition must also indicate the evidence and arguments presented in support of the grounds of opposition. However, Rule 55(c) EPC does not stipulate that the said facts, evidence and arguments have to be filed before the end of the 9 months period of Article 99(1) EPC.

With the notice of opposition the opponent submitted that the prior use in question concerned

- (i) cutting inserts of type 229 as shown in D7 and D8,
- (ii) which were produced as from July 1989 and made available to the public by offering them for sale

without any agreement on confidentiality (see point 1.3 of the notice of opposition), and  
(iii) that this happened before the priority date of the patent in suit.

Furthermore the notice of opposition included (iv) a statement that three witnesses were nominated to give evidence in support of the fact that inserts of type 229 according to D7 and D8 were made available to the public.

The notice of opposition thus indicates with (i) what has been used, with (ii) the circumstances relating to the use, with (iii) the date of prior use, and with (iv) the evidence in support of the allegations made. It also includes sufficient arguments at least in respect of the ground of opposition under Article 100(a) EPC of lack of novelty. It follows that the notice of opposition meets the requirements of Rule 55(c) EPC. Therefore, the opposition is admissible.

2.2 The Board agrees with the appellant that the respondent's arguments have no bearing on the admissibility of the opposition but rather belong to the substantive examination of the merits of the opposition.

As regards the respondent's objection concerning the lack of evidence in support of the inter-correlation of D7 and D8 and the public availability of products according to D7 and D8, the Board observes that the opponent's statement in the notice of opposition, according to which witnesses were cited to prove that

inserts of the type 229 according to D7 and D8 were available to the public by offering them for sale without any agreement on confidentiality, constitutes an indication that the opponent sought to give evidence by means of the hearing of the witnesses (which is one of the possibilities explicitly provided for by Article 117(1) EPC) in support of the facts that (i) the inserts were made available to the public and (ii) they had the features derivable from D7 and D8. By nominating the witnesses, submitting their addresses, and statements to be ascertained by the witnesses, the notice of opposition fulfilled the requirement of Rule 55(c) EPC of presenting an indication of evidence within the opposition period (see T 102/97, point 2.5). The question of whether these facts would be effectively proven by the witnesses concerns the substantive issue of the evaluation of evidence, which can only be made after hearing the witnesses, and does not concern the admissibility of the opposition (see also G 3/97, point 5). Analogously, also the respondent's objection that the W/H ratio defined in the claim of the patent in suit could not be considered properly proven by D8 concerns the substantive issue of evaluation of evidence.

The respondent further argued that since document D7 was provided with a date only on its first page the date of publication of the subsequent pages could not be determined, and that no witness was offered to explain how the drawing D8 was produced. The publication date of D7, and of D8 as well, is per se irrelevant for the question of admissibility of the opposition in view of the fact that the allegation made, and which should be proved by means of the

hearing of witnesses, was that inserts "according to D7 and D8" were made available to the public. As regards the issue of how the drawing of D8 was produced, and thus of whether it is suitable for extracting measurements of W and H, it also pertains to the substantive examination of the merits of the opposition as it necessitates a technical assessment of the content of D8.

- 2.3 Finally the Board notes that there is no basis in the case law of the boards of appeal, in particular decision T 522/94 cited by the respondent, to support the respondent's view according to which all the elements necessary for establishing whether a prior use effectively took place should be filed within the opposition period. The scope and depth of the "indication" referred to in Rule 55(c) EPC needs to be such as to enable the Patentee and the Opposition Division to see clearly just what attack is being mounted against the patent, and what evidential support is being adduced for that attack. In other words, the Patentee and the Opposition Division have to be put in a position of understanding clearly the nature of the objection being submitted as well as the evidence and arguments in its support (see T 204/91, point 5). This, however, does not mean that the evidence itself has to be presented within the opposition period so as to already allow at that time to establish whether an allegation is proved or not (see T 102/97, supra).

3. *The alleged prior use of an insert of type 229*

3.1 The appellant submitted that inserts of the type 229 according to D7 and D8 were made available to the public before the priority date of the patent in suit.

3.1.1 D7 shows on page V/44 a cutting tool insert comprising a cutting edge, a connecting nose area, a rake face and a clearance face. No details of the rounding of the cutting edges along the rake and clearance faces can be inferred from D7. The only rounding ( $r$ ) shown in D7 is the rounding at the intersection between the front and lateral cutting edges.

As regards D8, considering that the numerical values of the insert's dimensions indicated therein are already disclosed by D7 (see the drawings of the insert and the table immediately below on page V/44 of D7), it shows additionally only portions of the cutting edge profiles, namely a side view of the front cutting edge (view X), a cross-sectional view of the middle of the lateral cutting edge (view B-B) and a cross-sectional view of the nose area (view A-A), from which it can be inferred that the cutting edges are rounded. The presence of rounded edges is emphasized by the provision of arrows indicating the presence, not however the value, of two radiuses of curvature at each cutting edge.

The width  $W$  of edge rounding along the rake face and the width  $H$  of edge rounding along the clearance face are not shown in the drawing D8. According to the appellant's own submission during the oral proceedings before the Board, the measurements of  $W$  and  $H$  were

taken by the appellant's representative on enlargements of views A-A and B-B (see handwritten measurements in the sheets annexed to the drawing D8) or on view X (see handwritten measurements in the copies of D8 submitted as D14 and D15 during the opposition proceedings). The appellant further submitted that measurements of W and H were not taken on actual inserts of type 229, nor was it possible, for lack of adequate measurement means present at the appellant's premises, to make such measurements with sufficient precision before the priority date of the patent in suit. Anyway, sufficiently precise measurements of W and H could be taken from the drawings because they were in scale representations of inserts of type 229. Further, according to the appellant's submissions, the rounding of the cutting edges of inserts of the type 229 was carried out by manual brushing.

3.1.2 In the present case, the Board considers it appropriate to start from the hypothesis that inserts of type 229 as shown in the drawing D8 as alleged by the appellant were effectively made available to the public before the priority date of the patent in suit, and only if the alleged prior use is found pertinent as to its subject-matter to investigate whether it can be established as fact, for example by hearing the witnesses offered by the appellant.

3.1.3 As shown in the sheets annexed to D8, the measurements of W and H made by the appellant's representative in views A-A and B-B led to substantially different results, namely W=9.9 and H=5.2 in A-A and W=8.5 and H=6.3 in B-B. However, as demonstrated by the Board during the oral proceedings, by holding the appellant's

magnified detail drawing "Schnitt A-A" and "Schnitt B-B" against the light and then shifting the drawings so as to overlap, no differences between the profiles could be found. Furthermore, the profiles shown in A-A and B-B are only partial representations of the inserts and do not allow a clear determination of the position of the rake and clearance faces, which is essential for measuring the amount of edge rounding along these faces. The same applies to view X, which is a partial representation of a lateral view of the front cutting edge.

3.1.4 Hence, taking the allegations made by the appellant as to the properties of the inserts of type 229 as fact, this prior use would not have made available to the skilled person the features of the patent claim concerning the width W of edge rounding along the clearance face and the width H of edge rounding along the clearance face. As a consequence, the issues of whether the main cutting edge is that shown in view X or in cut B-B of D8 as well as the appellant's offer to hear witnesses for proving the allegations made, become irrelevant.

3.2 As to the appellant's further submission, that a certain amount of the inserts of type 229 put on the market inevitably had values of H and W according to claim 1 of the patent in suit, not because of a specific technical measure taken during the manufacture of the inserts, but as the unavoidable result of the broad stochastic distribution of H and W among the large number of inserts manufactured, the Board observes the following.

3.2.1 Although it can be accepted that, because of the manual rounding by brushing, there is a variance of H and W within a certain range of manufacturing tolerances, no information, or data allowing to establish that inserts having values of H and W falling within the scope of claim 1 of the patent in suit were effectively produced and sold to the public was provided by the appellant, nor was any evidence offered in this respect. Such information or data, e.g. actual values of the variance or of the standard deviation of H and W, could in fact only be obtained on the basis of measurements of H and W made on a significant number of manufactured inserts, which measurements, by the appellant's own submissions, were not carried out at all. In absence of any such information or data, the above-mentioned further submission of the appellant must be regarded as an unsubstantiated allegation.

3.2.2 Furthermore, the evidence submitted rather supports the conclusion that it is very unlikely that some of the inserts manufactured had values of H and W values falling in the claimed area as a consequence of the large variations of H and W during manufacturing of the inserts. In fact, D8 quite surprisingly shows that manually rounded contours in the nose area and in the middle of the lateral cutting edge portion ("Schnitt A-A" and "Schnitt B-B", respectively), are identical, yet different from the manually rounded contour in the middle of the front cutting edge ("Einzelheit X"), although each of these contours involves two radiuses obtained by manual brushing. Since the provision of identical contours suggests a high precision of the rounding operation, the allegation, relied upon by the appellant in support of its allegation of lack of



novelty, according to which D8 accurately reproduces the profiles of inserts of the type 229 as made available to the public, actually points in the direction of minor deviations from the contour shown in D8 during manufacture of the inserts and thus is indicative of a rather low variance of H and W.

3.2.3 It is further pointed out that the appellant's submission under consideration is not based on the identification of a **specific** prior used object, but on the purported statistically unavoidable presence, amongst the large quantity of inserts produced, of **undetermined** (as to their precise dimensions, time and circumstances of public availability) prior used cutting inserts having the relevant features of claim 1 of the patent in suit. Since for the reasons given above the appellant's submission must be regarded as an unsubstantiated allegation, there is no necessity for the Board to pursue the question of whether such an unspecified prior use could be validly opposed to the novelty of the claimed cutting insert.

#### 4. *Novelty*

4.1 It follows from point 3.2 above that the alleged prior use would not be prejudicial to the novelty of the claimed subject-matter.

4.2 The appellant argued that the values of H and W could only be determined with large approximation, the patent in suit being silent about any specific method for their measurement. This would imply that also the limitations defined in the claim of the patent in suit for W and H should be regarded as very approximate, the

claim in fact covering inserts having e.g. ratios of W/H outside the ranges defined in the characterizing portion.

The appellant also submitted that modern measuring means were now available for measuring W and H. The approximation in measuring W and H depends therefore mainly on the measurement error expectable with such measuring means. As regards the manner of determining the widths W and H, figures 2 and 3 of the patent in suit are self-explanatory, as they show that W and H must be respectively measured along the prolongations of the rake and clearance faces, starting from the point at which the radius of curvature on one face begins, up to the prolongation of the other face.

Furthermore, the appellant contended that the disclosure of the patent in suit was insufficient in respect of how to determine W and H when the rake clearance faces were inclined with respect to the horizontal and the vertical plane, respectively, rather than forming an angle of 90° as shown in the figures of the patent in suit. However, the appellant did not offer or submit any evidence in support of the view that if the rake and clearance faces have inclinations within the usual values for cutting inserts, then W and H would not be measurable with a sufficient precision taking into account the expectable measurement error of the measuring means used.

Accordingly, the ranges concerning W and H specified in the claim define sufficiently precise limitations for characterizing the claimed insert, having regard to the expectable errors in measurements of this kind.

4.3 It is noted in this context that the objection under Article 83 raised by the appellant on the basis of the contended insufficient disclosure just discussed is inadmissible, as it implies the introduction of a new ground of opposition under Article 100(b) EPC for which the patentee has not given its agreement (see G 7/95).

4.4 Finally, the Board concurs with the view of the Opposition Division (point 4.2 of the decision under appeal) that the remaining prior art cited nowhere discloses the characterizing features of the claim in combination.

5. *Inventive step*

5.1 The problem underlying the patent in suit is to reduce flank wear in the nose area and to improve the toughness behaviour on the main cutting edge of a cutting tool insert (see par. [006] of the patent in suit).

This problem is solved by a cutting tool insert having the features defined in the claim, in particular by the provision of a ratio  $W/H$  which, in the middle of the main cutting edge, is 1.0 to 1.6, and, in the nose area, is 1.5 to 2.3.

5.2 Still under the assumption that the prior use of inserts having the properties derivable from D7 and D8 ("type 229, not having, however, values of  $W$  and  $H$  such that the ratio  $W/H$  falls within the claimed ranges, see point 3 above) effectively took place so that these inserts were made available to the public, it is

appropriate to consider these inserts as the closest prior art in accordance with the appellant's submissions.

Since, in accordance with the Opposition Division's finding in point 4.2 of the decision under appeal, the available prior art, including the prior use, does not suggest to solve the above-mentioned technical problem by varying the W/H ratio in the manner claimed, it is to be concluded that the skilled person would not have arrived in an obvious manner to an insert according to the claim in question.

- 5.3 The appellant referred also to D13, which discloses a cutting tool insert comprising a substrate and a coating film provided thereon (see claim 1), the insert having a rounded cutting edge (see Fig. 6(a)). In Fig. 6(a) the widths of the cutting edge rounding along the rake surface (15) and along the clearance face (16) in the middle of the main cutting edge of the non-coated substrate of the cutting insert are indicated as b and a, respectively. Specific values of a and b are disclosed (see col. 4, lines 23,24). This document is however silent on how the cutting edge is rounded in the nose area. Thus, even if the skilled person would have applied the specific values disclosed in D13 for the widths of edge rounding in the middle of the main cutting edge to the prior used insert of type 229, as argued by the appellant, it would not have found any suggestion in the prior art, including the allegedly prior used insert as shown in D8, to provide specific values for the widths of edge rounding in the nose area, in particular values meeting the requirements of the claim of the patent in suit.

6. It follows from the above that the edge rounded cutting tool insert according to the claim of the patent in suit is novel (Article 54(2)) and involves an inventive step (Article 56 EPC) over the prior art even when assuming that the latter comprises inserts of the type 229.

### **Order**

#### **For these reasons it is decided that:**

1. The request for hearing witnesses is rejected.
2. The appeal is dismissed.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau