

Internal distribution code:

- (A) [-] Publication in OJ
- (B) [-] To Chairmen and Members
- (C) [-] To Chairmen
- (D) [X] No distribution

**Datasheet for the decision
of 11 August 2017**

Case Number: T 1623/14 - 3.2.08

Application Number: 04721050.5

Publication Number: 1635977

IPC: B23C5/22

Language of the proceedings: EN

Title of invention:

A MILLING TOOL WITH CO-OPERATING PROJECTIONS AND RECESSES
BETWEEN THE CUTTING INSERT AND THE HOLDER

Patent Proprietor:

Seco Tools AB

Opponent:

KENNAMETAL INC.

Headword:

Relevant legal provisions:

EPC 1973 Art. 54, 56, 113

EPC 1973 R. 67

Keyword:

Novelty - (yes)

Inventive step - main request (no) - first auxiliary request
(no) - second auxiliary request (yes)

Reimbursement of appeal fee - appealed decision sufficiently
reasoned (no)

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 1623/14 - 3.2.08

D E C I S I O N
of Technical Board of Appeal 3.2.08
of 11 August 2017

Appellant: KENNAMETAL INC.
(Opponent) 1600 Technology Way
Latrobe, PA 15650-0231 (US)

Representative: Prinz & Partner mbB
Patent- und Rechtsanwälte
Rundfunkplatz 2
80335 München (DE)

Respondent: Seco Tools AB
(Patent Proprietor) 737 82 Fagersta (SE)

Representative: WSL Patentanwälte Partnerschaft mbB
Kaiser-Friedrich-Ring 98
65185 Wiesbaden (DE)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 4 July 2014 rejecting the opposition filed against European patent No. 1635977 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chair P. Acton
Members: M. Foulger
G. Decker

Summary of Facts and Submissions

- I. With the decision dated 4 July 2014, the opposition division rejected the opposition against European patent no. 1 635 977.
- II. The appellant (opponent) filed an appeal against this decision. The appeal was filed in due form and within the given time limits.
- III. Oral proceedings took place before the Board on 8 August 2017. At the end of the oral proceedings the Board announced that the decision would be issued in writing.
- IV. At the end of the oral proceedings the requests were as follows:

The appellant requested that the decision under appeal be set aside and that the European patent No. 1 635 977 be revoked. The appellant further requested that the appeal fee be reimbursed and that the case not be remitted to the opposition division.

The respondent (patent proprietor) requested that the appeal be dismissed, or, in the alternative, that the patent be maintained in amended form on the basis of claims 1 to 9 of the first auxiliary request filed with letter of 17 April 2014 or of claims 1 to 8 of the second auxiliary request filed during the oral proceedings.

- V. a) Main Request - Patent as granted

Claim 1 reads as follows:

"A milling tool comprising a shaft (11) and a front chip-removing end (12), the end having at least one cutting insert pocket (13,14) comprising a boring (21), which pocket carries an indexable cutting insert (30;30'), a clamping means (15) being arranged to hold the cutting insert in the cutting insert pocket, the cutting insert (30;30') being asymmetrical in respect of a line (E-E) through a hole (31) in the cutting insert, the cutting insert comprising two cutting edge portions, each cutting edge portion consisting of a substantially straight cutting edge (32,33) and a curved cutting edge (38,39) along respective intersecting lines between a clearance surface (34A) and a chip surface (35), the curved cutting edges having different lengths, the cutting insert pocket and the cutting insert comprising co-operating projections (19,20) and recesses (41,42), **characterized in that** the projections (19,20) are arranged on both sides of and at different distances from the boring (21) and **in that** the recesses (41,42) are arranged on both sides of and at different distances from the hole (31) of the cutting insert."

Claim 6 of the main request (patent as granted) reads as follows:

"An indexable cutting insert (30;30') for a milling tool, the cutting insert (30;30') being asymmetrical in respect of a line (E-E) through a hole (31) in the cutting insert, the cutting insert comprising two cutting edge portions, each cutting edge portion consisting of a substantially straight cutting edge (32,33) and a curved cutting edge (38,39) along respective intersecting lines between a clearance surface (34A) and a chip surface (35), the curved cutting edges having different lengths, the cutting

insert comprising recesses (41,42) in a bottom side (40) of the cutting insert, **characterized in that** the recesses (41,42) are arranged on both sides of and at different distances from the hole (31) of the cutting insert."

b) First auxiliary request

The feature "wherein each recess (41,42) intersects solely one of the clearances surfaces (34A) under the curved cutting edge (38,39)" has been added to the independent claims. The independent claim relating to an indexable cutting insert (claim 6 in the main request) has been renumbered as claim 5.

c) Second auxiliary request

The feature that each recess is "limited by an end wall (43)" has been added to independent claims 1 and 5 of the first auxiliary request.

VI. The following documents are referred to in this decision:

D1: US 5,951,213 A
D8: EP 0 842 723 A1

VII. The appellant argued essentially as follows:

a) Main request

i) Novelty

D1 disclosed an asymmetrical insert with all the features of the preamble of claim 6. This insert also had two recesses - 51' and 51". In Fig. 2b these

recesses were shown at different distances to the hole 17. Moreover, the lines from the reference signs to the recesses were shown terminating at different distances from the hole. Given that the insert of D1 was asymmetrical this gave a clear disclosure that the recesses were at different distances from the hole.

Thus the subject-matter of claim 6 was known from D1.

ii) Inventive step

D1 was the closest prior art. The subject-matter of claim 6 possibly differed from the insert known from D1 in that the recesses were at different distances from the hole.

Given that D1 provided an asymmetrical insert (col. 5, l. 32-35), the problem to be solved was to improve the mistake-proofing of the insert by preventing the insert being attached to the cutting tool in the incorrect orientation.

The skilled person was aware of the "poka-yoke" mistake proofing concept and would apply this to the insert known from D1. There were only two possibilities for positioning the recesses - either they were at equal distances or they were at different distances to the hole. The skilled person therefore only had a limited number of possibilities from which to choose and it was obvious that the second of these alternatives would provide an insert which was harder to mount in the incorrect orientation.

The fact that D1 already disclosed an asymmetrical cutting insert would not have dissuaded the skilled person from further measures to improve the mistake-

proofing because D1 also disclosed embodiments without the supporting surfaces 31 and 32 (see col. 7, l. 42-43). This meant that it was necessary to provide alternative measures in order to ensure the correct positioning of the insert.

Hence, in order to solve the above problem, the skilled person would have, without the exercise of inventive activity, placed the recesses at different distances from the hole of the insert.

The subject-matter of claim 6 did not therefore involve an inventive step.

b) First auxiliary request

The subject-matter of claim 5 differed from the insert disclosed in D1:

- in that the recesses were at different distances from the hole and
- in that each recess intersected solely one of the clearance surfaces under the curved cutting edge.

As discussed above for the main request, the first feature solved the problem of improving mistake-proofing. The second distinguishing feature solved the problem of improving the fixation of the insert on the tool. These problems were separate and did not involve any synergy. They could thus be treated as a mere aggregation.

Regarding the wording of the claim, the term "solely" clearly referred only to the clearance surface and not to the phrase "under the curved cutting edge". This was grammatically the most logical explanation and supported by the patent description at col. 4, l. 52-53.

D8, Figs 7 and 8, disclosed an insert wherein each of the two recesses intersected solely one of the clearance surfaces under the curved cutting edge. The recesses of D8 were shaped so as to provide an improved fixing for the insert, see col. 3, l. 42-54.

The skilled person would have therefore applied this teaching to the insert of D1 to arrive at the second distinguishing feature without the exercise of inventive skill.

As discussed above for the main request, the first distinguishing feature did not involve an inventive step. In order to solve the above problems, the skilled person would have combined their solutions to arrive at the subject-matter of claim 5.

Hence, the subject-matter of claim 5 did not involve an inventive step.

c) Second auxiliary request

i) Claim 5

Fig. 7 of D8 also disclosed an end wall of the recess. In Fig. 7A the side wall which ran parallel to the straight cutting edge could be seen curving round to meet the straight cutting edge. This curved portion constituted an end wall. Thus, as explained above for the first auxiliary request, the combination of the teachings of D1 and D8 and the common general knowledge would have led the skilled person to the subject-matter of claim 5 without an inventive step.

ii) Claim 1

The above arguments were also applicable to claim 1 whose subject-matter therefore also lacked an inventive step.

d) Reimbursement of the appeal fee

During the proceedings before the opposition division it had been consistently argued that the subject-matter of the independent claims lacked an inventive step with respect to D1 and the common general knowledge of the skilled person. In the decision under appeal there was no mention of this argument. The decision under appeal was therefore insufficiently reasoned which led to a substantial procedural violation justifying the reimbursement of the appeal fee.

VIII. The respondent argued essentially as follows:

a) Main request

i) Novelty

D1 did not disclose that the recesses were arranged at different distances from the hole. It was not permissible to take measurements from the figures of D1, especially since Fig. 2b was a perspective view, and the point at which the lines from the reference signs ended was merely an arbitrary choice of the draughtsperson. Moreover, the written part of the description did not contain any hint regarding this feature.

The subject-matter of claim 1 was therefore new with respect to D1.

ii) Inventive step

D1 disclosed an insert according to the preamble of claim 1 with two recesses which were arranged on both sides of the hole.

The characterising feature of claim 6 had the technical effect of helping to ensure that the insert was mounted in the correct orientation. D1 already solved this problem due to the non-central location of the fixing hole; thus the skilled person would have had no reason to modify the insert of D1 in order to assure its correct positioning.

The subject-matter of claim 6 therefore involved an inventive step.

b) First auxiliary request

The additional feature of claim 5 whereby each recess intersected solely one of the clearance surfaces under the curved cutting edge had the technical effect of improving the fixing of the insert, in particular its ability to accept axial loads.

The word "solely" referred to both the clearance surface and the curved cutting edge and thus excluded embodiments wherein the recess intersected with the straight edge of the insert.

D8 disclosed a symmetrical insert and for this reason alone the skilled person would not have taken it into account. Furthermore, although it taught how to improve the fixing of the insert, it did this by means of a recess parallel to the straight edge of the insert. Even if it were decided that the recess could

additionally intersect with the straight edge, then the skilled person would not recognise that the embodiments of Figs. 7 and 8 were suitable to solve the problem of axial loading because of their tapered form. The tapered form of the recess meant that there was no surface that could oppose axial loading of the insert.

Thus, the subject-matter of claim 5 involved an inventive step.

c) Second auxiliary request

i) Claim 5

The additional feature of claim 5 specifying the presence of the end wall had the technical effect of providing an abutment for a protrusion on the tool in case the fixing screw deflected, see patent paragraph [0017], lines 52-56.

None of the cited documents disclosed such an end wall. In particular, Fig. 7 of D8 disclosed a side wall which ran out into the periphery of the insert at an acute angle. Fig. 8 of D8 disclosed an inclined bottom which ran out onto the insert bottom. In neither of these embodiments was there an end wall disclosed. Moreover the skilled person would not have incorporated such an end wall without a definite hint in the prior art. To have done so would have required several changes to the insert of D1 which would have gone beyond the normal modifications that the skilled person could be expected to make.

The subject-matter of claim 5 therefore involved an inventive step.

ii) Claim 1

The above arguments were also applicable to claim 1 whose subject-matter therefore also involved an inventive step.

d) Reimbursement of the appeal fee

There was no comment regarding this point.

Reasons for the Decision

1. Main request

1.1 Novelty

It is common ground that D1 discloses all features of the preamble of claim 6 and the feature that the recesses (51',51") are arranged on both sides of the hole of the cutting insert.

Due to the perspective representation in Fig. 2b, it is, however, not possible to determine whether one recess is further from the fixing hole than the other recess. Furthermore, the written part of D1 does not provide any further information.

Moreover, the lines between the reference signs and the recesses are merely arbitrary lines by the draughtsperson for illustrative purposes and, hence, cannot provide any technical information about the exact position of the recesses.

The feature of claim 6 whereby the recesses are arranged at different distances from the hole, is therefore not known from D1 and consequently the

subject-matter of claim 6 is new.

1.2 Inventive step

D1 discloses the features of claim 6 identified above. The subject-matter of claim 6 therefore differs from this known insert in that the recesses are arranged at different distances from the hole of the cutting insert.

This feature has the technical effect that the insert may only be mounted in one sense and therefore that it is not possible to mount the insert incorrectly. This is especially so because the disclosure of D1 also includes embodiments without the supporting surfaces 31 and 32 (see col. 7, l. 42-43) and thus the mistake-proofing is not assured by the asymmetric form of the insert.

The problem to be solved is to provide an insert which is more difficult to mount in the incorrect orientation.

It is common ground that the skilled person is aware of methods of mistake proofing ("poka-yoke") as part of their common general knowledge.

In carrying out the teaching of D1 the skilled person would have to decide whether the recesses should be arranged at the same distance from the central hole or at different distances.

Given the choice between these two possibilities the skilled person would, in seeking to improve the mistake proofing of the insert, arrange the recesses at different distances from the central hole. They would

do this without the exercise of inventive activity because this leads to an asymmetric arrangement which is more difficult to mount in the incorrect orientation.

The subject-matter of claim 6 does not therefore involve an inventive step.

2. First auxiliary request

2.1 The feature, whereby each recess intersects solely one of the clearance surfaces under the curved cutting edge, has been added to the independent claim relating to the cutting insert which is now claim 5.

It is undisputed that this additional feature is not known from D1. The subject-matter of claim 5 therefore differs from the insert of D1 in that:

- the recesses are arranged at different distances from the hole of the cutting insert,
- each recess intersects solely one of the clearance surfaces under the curved cutting edge.

2.2 Concerning the interpretation of claim 5, the Board considers that the term "solely" in claim 5 must relate to the one of the clearance surfaces and not also to the phrase "under the curved cutting edge". Grammatically this is the most logical explanation and also should the patent specification be consulted at col. 4, l. 52-53, it is clear that it is the intersection with the clearance surface that is meant.

2.3 The above distinguishing features have the following technical effects:

- as discussed above for the main request, the first distinguishing feature has the technical effect of

improving the mistake proofing of the insert,
- the second distinguishing feature has the technical effect of allowing a more secure fixation of the insert on the tool.

There is no synergy between the characterising features. Moreover, the above technical effects are not related and may be achieved independently. These features may thus be considered as a mere aggregation.

2.4 D8 relates to a symmetrical insert wherein recesses are provided which run parallel to the straight cutting edges. The recesses provide for better support of the insert on the cutting tool (col. 3, l. 42-47). Whilst some embodiments of D8, e.g. that of Fig. 1, do not intersect with a clearance surface under the curved cutting edge, the embodiments of Figs. 7 and 8 do (see col. 8, l. 33-35). Thus this feature is known from D8, Figs. 7 and 8.

Contrary to the respondent's arguments, the fact that D8 teaches a symmetrical insert would not dissuade the skilled person from considering this document because the skilled person is only seeking a solution to the problem of the support of the insert - the problem of mistake proofing having already been addressed by the combination of the teaching of D1 and the common general knowledge of the skilled person.

Therefore to solve the partial problem of improving the fixation of the insert on the tool, the skilled person would apply the recesses shown in Figs. 7 or 8 of D8 to the insert known from D1 without the exercise of inventive activity.

2.5 As discussed above for the main request, the first distinguishing feature also lacks an inventive step in view of D1 combined with the common general knowledge.

The subject-matter of claim 5 therefore lacks an inventive step.

3. Second auxiliary request

3.1 Claim 5

Claim 5 of the second auxiliary request is further limited over claim 5 of the first auxiliary request by the feature that each recess is limited by an end wall.

Again it is common ground that D1 represents the closest prior art and discloses the features identified above. The subject-matter of claim 5 therefore differs from the cutting insert disclosed in D1 in that:

- the recesses are arranged at different distances from the hole of the cutting insert,
- each recess intersects solely one of the clearance surfaces under the curved cutting edge and is limited by an end wall (feature A).

As discussed above, the first of these distinguishing features does not involve an inventive step.

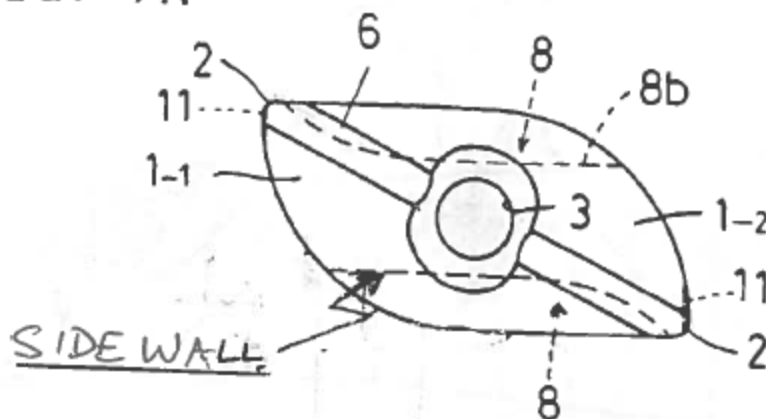
Feature A has the technical effect of providing a support against which the projections 19, 20 of the tool may abut should the fastening screw deflect (see patent, paragraph [0017], lines 52-56).

D8 does not disclose an end wall which limits the recess because Fig. 8 discloses a sloping bottom which runs out onto the bottom surface of the insert and

Fig. 7A shows a side wall with a curved portion. The Board considers that a wall in the sense of the claim must be understood as being a distinct element of the recess which forms some kind of barrier ("wall"). Moreover, since the term "end" must be viewed as being distinct from the "side", an "end wall" is different from a "side wall".

Since the longer part of the recess forms the side wall, the recess in Fig. 7A of D8 is formed by a side wall which curves around to join the outer periphery of the insert, see below:

FIG. 7A



Thus even taking into account the teaching of D8 and common general knowledge, the skilled person would not arrive at the subject-matter. The subject-matter of claim 5 therefore involves an inventive step.

3.2 Claim 1

As claim 1 includes all features of claim 5, the above reasoning is directly applicable. The subject-matter of claim 1 therefore involves an inventive step.

4. Reimbursement of appeal fee (Rule 67, first sentence, EPC 1973)
 - 4.1 According to Rule 67, first sentence, EPC 1973 (regarding the applicability of the provisions of the EPC 1973 instead of Rule 103(1)(a) of the EPC in the revised text for European patent applications pending at the time of its entry into force, see J 10/07, OJ EPO 2008, 567, 585, 586, point 7 of the Reasons), "the reimbursement of appeal fees shall be ordered ... where the Board of Appeal deems an appeal to be allowable, if such reimbursement is equitable by reason of a substantial procedural violation".
 - 4.2 As regards the first prerequisite of said rule, allowability may also be the case if the appeal is only partly allowed, provided that the Board, in substance at least, follows the request sought by the appellant (see J 37/89, point 6 of the Reasons). This can be interpreted in the sense that the Board must be in disagreement with the main argumentation in the decision under appeal as concerns the *ratio decidendi*, i.e. that the Board in essence accepts the appellant's reasons concerning the case decided by the decision under appeal (see T 228/89, point 4.2 of the Reasons; T 704/96, point 6.1 of the Reasons).
 - 4.3 As outlined above at point 1.2, the Board, contrary to the Opposition Division and essentially accepting the appellant's reasons, holds that the subject-matter of claim 6 as granted (main request) lacked an inventive step in view of the disclosure of document D1 in combination with common general knowledge. Consequently, the decision under appeal is to be set aside, which is why the Board follows in substance the request of the appellant.

- 4.4 Moreover, in the present case the reimbursement is equitable by reason of a substantial procedural violation.
- 4.4.1 The obligation to provide adequate reasoning in a decision in accordance with Rule 68(2) EPC 1973 is closely linked to the principle of the right to be heard under Article 113 EPC 1973. A failure to do so is to be considered a substantial procedural violation justifying the reimbursement of the fee for appeal (see Case Law of the Boards of Appeal of the European Patent Office, 8th Edition, July 2016, IV. E. 8.4.4, with further references).
- 4.4.2 The appellant in the first instance proceedings explicitly and repeatedly argued that the subject-matter of claim 6 of the patent was not inventive in view of document D1 in combination with the common general knowledge of the skilled person (see letter of 22 April 2014, points 2 and 3, and minutes of the oral proceedings before the Opposition division on 20 May 2014, point 8).
- 4.4.3 However, the Opposition Division in its reasons for the decision, page 3, when discussing inventive step of the subject-matter of claim 6 made reference only to documents D5 and D4 as prior art documents and neither explicitly nor implicitly took into account the alleged common general knowledge of the skilled person. The Opposition Division therefore failed to address the main argument submitted by the appellant; this constitutes inadequate reasoning which contravenes Article 113 EPC 1973 and results in a substantial procedural violation.

4.5 As a result, the Board according to Rule 67, first sentence, EPC 1973 finds the request for reimbursement of the appeal fee allowable.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The appeal fee is to be reimbursed.
3. The case is remitted to the Opposition Division with the order to maintain the patent in amended form based on the following documents:
 - Claims 1-8 according to the second auxiliary request filed during the oral proceedings on 8 August 2017
 - Figures 1A-F, 2A-F, 3A-F of the patent specification
 - Description to be adapted.

The Registrar:

The Chair:



C. Moser

P. Acton

Decision electronically authenticated