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**Datasheet for the decision
of 19 July 2021**

Case Number: T 0921/20 - 3.2.01

Application Number: 10755810.8

Publication Number: 2412464

IPC: B23C5/10, B23B27/14, B23C5/06,
B23C5/20

Language of the proceedings: EN

Title of invention:
MILLING CUTTER

Patent Proprietor:
Mitsubishi Hitachi Tool Engineering, Ltd.

Opponent:
Sandvik Intellectual Property AB

Headword:

Relevant legal provisions:
EPC Art. 100(c), 123(2)

Keyword:

Grounds for opposition - subject-matter extends beyond content of earlier application (yes)

Amendments - extension beyond the content of the application as filed (yes)

Decisions cited:

G 0002/10, G 0001/93

Catchword:



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Chambres de recours

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Case Number: T 0921/20 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 19 July 2021

Appellant: Mitsubishi Hitachi Tool Engineering, Ltd.
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
10 February 2020 concerning maintenance of the
European Patent No. 2412464 in amended form.**

Composition of the Board:

Chairman G. Pricolo
Members: J. J. de Acha González
S. Fernández de Córdoba

Summary of Facts and Submissions

- I. The appeal of the patent proprietor lies against the decision of the Opposition Division to maintain European patent No. 2 412 464 in amended form according to the auxiliary request 3 (Ib).
- II. The Opposition Division found among others that the subject-matter of the granted patent (main request) and of the auxiliary requests 1 (I) and 2 (Ia) went beyond the content of the application as originally filed (Articles 100(c), 123(2) EPC).
- III. The opponent (respondent) also filed an appeal against the decision of the Opposition Division, requesting the revocation of the European patent, but withdrew its appeal with letter of 8 October 2020.
The respondent (opponent) did not file any submissions in reply to the appeal of the patent proprietor.
- IV. Oral proceedings before the Board were held on 19 July 2021 in the form of a videoconference.
- V. The appellant (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained as granted (main request), or, in the alternative, that the patent be maintained in amended form according to one of the auxiliary requests 0, 0a, 1 (I) and 2 (Ia) filed with the statement of grounds of appeal.

The respondent (opponent) requested in writing that the decision under appeal be set aside. The Chairman stated that the opponent withdrew its appeal with letter of 8 October 2020. Therefore, auxiliary request 3, which

was the version maintained by the opposition division, could no longer be questioned.

VI. Independent claims 1, 5 and 10 of the patent as granted read as follows (feature numbering according to the impugned decision):

- F1.1 **"1.** An indexable milling cutter,
F1.2 comprising an insert (2) attached thereto, the insert
(2) being adapted to be attached to and detached from a
cutter body (1) and
F1.3 having a polygonal plate shape as seen in a plan view,
F1.4 - wherein a ridge line portion of a main cutting edge
(6) of the insert (2) forms a protruding shape in an
outward direction of the insert (2);
characterised in that
F1.5 a negative honing (15),
F1.6 a land (16), and
F1.7 a breaker groove (17) are provided on a rake face (12)
of the main cutting edge (6); and
F1.8 a generally rounded corner cutting edge (5) is formed
in a connecting portion (9) between two adjacent sides;
F1.9 - wherein the shape of a surface portion of the land
(16) is a planar shape or a protruding shape;
F1.10 - wherein, when the insert (2) is attached to the
cutter body (1), the main cutting edge (6) of the
insert (2) has a lowermost point (8) of the cutter body
(1);
F1.11 - wherein the width of the negative honing (15) is
formed so as to gradually increase from the lowermost
point (8) of the cutter body (1) toward the connecting
portion (9); and
F1.12 - wherein the width of the land (16) is formed so as to
gradually increase from the lowermost point (8) of the
cutter body (1) toward the connecting portion (9)."

- F5.1 **"5.** An indexable milling cutter,
F5.2 comprising an insert (21) attached thereto, the insert
(21) being adapted to be attached to and detached from
a cutter body (20) and
F5.3 having a generally parallelogram plate shape with short
sides (23a) and long sides (23b) as seen in a plan
view,
F5.4 - wherein the insert (21) includes a main cutting edge
(26) having a circular arc shape in each of acute-angle
portions opposing each other; an upper surface thereof
including the main cutting edge (26) is used as a rake
face (25); and
characterised in that
F5.5 a negative honing (34) and
F5.6 a land (35) are provided extending from a ridge line
portion of the main cutting edge (26);
F5.7 - wherein the shape of a surface portion of the land
(35) is a planar shape or a protruding shape;
F5.8 - wherein, when the insert (21) is attached to the
cutter body (20), the main cutting edge (26) of the
insert (21) has a lowermost point (31) of the cutter
body (20) and a most peripheral point (32) of the
cutter body (20), and the shape of the main cutting
edge (26) from the lowermost point (31) to the most
peripheral point (32) is a precise circular arc shape;
F5.9 - wherein the width H of the negative honing (34)
gradually increases from the lowermost point (31)
toward the most peripheral point (32); and
F5.10 - wherein the width F of the land (35) is formed so as
to gradually increase from the lowermost point (31)
toward the most peripheral point (32)."

- F10.1 **"10.** An indexable milling cutter,
F10.2 comprising an insert (41) attached thereto, the insert
(41) being adapted to be attached to and detached from
a cutter body (40) and

F10.3 having a generally circular plate shape as seen in a plan view,

F10.4 - wherein a side surface (51) of the insert (41) is used as a flank face across the entire circumference thereof;

characterised in that

F10.5 a plurality of rake faces (50) are provided along an outer peripheral portion of an upper surface of the insert (41); and

F10.6 a ridge line portion between the flank face and the rake face is used as a cutting edge;

F10.7 - wherein, when the insert (41) is attached to the cutter body (40), the cutting edge has a lowermost point (46) of the cutter body (40), a main cutting edge (45) in an outer periphery side direction of the cutter body (40) and a minor cutting edge (47) on an inner periphery side of the cutter body (40) with the lowermost point (46) interposed therebetween;

F10.8 a connecting portion (48) where the main cutting edge (45) and the minor cutting edge (47) are adjacent to each other is provided on an outer periphery side of the cutter body (40); and

F10.9 a negative honing (52),

F10.10 a land (53), and

F10.11 a breaker groove (54) are provided on the rake face of the main cutting edge (45);

F10.12 - wherein the shape of a surface portion of the land (53) is a planar shape or a protruding shape;

F10.13 - wherein the width of the negative honing (52) gradually increases from the lowermost point (46) toward the outer periphery side to the connecting portion (48); and

F10.14 - wherein a width of the land (53) gradually increases toward the outer periphery side from the lowermost point (46) to the connecting portion (48)."

Independent claims 5 and 10 of auxiliary requests 0, 0a, 1 (I) and 2 (Ia) are identical to granted independent claims 5 and 10.

Reasons for the Decision

1. The subject-matter of claims 1, 5 and 10 as granted goes beyond the content of the application as originally filed (Article 100(c) EPC).
- 1.1 The Opposition Division held that features F1.9, F5.7, and F10.12 of claims 1, 5 and 10, respectively, covered the possibility that only a part of the land was planar or protruding, and this could not be derived from paragraph [0048] of the application as filed. Furthermore, the feature that the land had a planar shape or a protruding shape (see features F5.7 and F10.12 of claims 5 and 10, respectively) was only disclosed in connection with the first embodiment comprising an insert having a polygonal shape, whereas the indexable milling cutters of independent granted claims 5 and 10 were directed to the second and third embodiments, respectively, which comprised an insert having a generally parallelogram plate shape (see para. [0089] to [0134] and figures 11 to 18 of the application as originally filed; claim 5) and an insert having a generally circular plate shape (see para. [0135] to [0173]; claim 10).
- 1.2 The appellant argued that the feature "wherein the shape of a surface portion of the land is a planar shape or a protruding shape" (see features F1.9, F5.7

and F10.12) was explicitly disclosed in paragraph [0048] of the description as originally filed. Although this disclosure was in connection with the first embodiment comprising an insert having a polygonal shape, the skilled person would derive from the description taken as a whole and from the figures of the application as originally filed that this feature also applied to the second and third embodiments. Moreover, the skilled person knew that the land of such an insert was formed between the honing and the breaker groove, and could as a consequence only be planar or protruding in shape and void of any recesses since a recess would inevitably provide the effects of a breaker groove. Accordingly, the appellant by referring to the decision of the Enlarged Board of Appeal G 1/93 argued that this additional feature could not give rise to unwarranted advantage and be damaging the legal security of third parties relying on the content of the original application since the skilled reader expected a land to have a planar or protruding shape and consequently the feature did not provide any additional technically relevant contribution. Thus, the additional feature merely excluded protection for part of the subject-matter of the claimed invention as covered by the application as filed and was not to be considered as subject-matter extending beyond the content of the application as filed.

- 1.3 According to established case law of the Boards of Appeal, the criteria for assessing whether the subject-matter of a patent extends beyond the content of the application as originally filed is the gold standard, namely whether the amendment of the claims results in subject-matter which is directly and unambiguously derivable by a skilled person, using common general knowledge, and seen objectively and relative to the

date of filing, from the whole of the documents as filed (see e.g. decision of the Enlarged Board of Appeal G 2/10, point 4.3 of the reasons).

- 1.4 In the case at hand the Board concurs with the conclusions of the Opposition Division in its decision (see points 13.2 and 13.4 of the impugned decision).
- 1.4.1 Paragraph [0048] of the application as originally filed pertains to the disclosure of the first embodiment of the invention, namely a milling cutter comprising a polygonal plate shaped insert (see para. [0039] to [0088] and figures 1 to 10 as originally filed). In the Board's judgment it can only be derived from that passage that the shape of the entire land is planar or protruding. The appellant correctly noted that this paragraph mentions a "surface portion" but took this term out of the context in which it is disclosed. The textual disclosure is "the cross-sectional shape (the shape of the surface portion) of the land ... exhibits a planar land (flat land), it may be a protruding shape having a circular arc cross-sectional shape, or the like, for example.". In this context, "the shape of the surface portion" can only be understood as specifying that the land is planar or protruding not only in cross-section (which is bidimensional) but over its entire surface. By no means this passage conveys clearly and unambiguously the technical information that only a portion of the surface of the land may have a planar or protruding shape. Since claims 1, 5 and 10 include the feature that the shape of a surface portion of the land is planar or protruding, its subject-matter goes beyond the content of the application as originally filed.

1.4.2 As regards the disclosure of the second and third embodiments of the invention, the application as originally filed is silent on the particular shape of the land for the generally parallelogram and circular plate shaped inserts. Paragraph [0048] belongs specifically to the disclosure of the first embodiment of the invention. When describing the second and third embodiments, the application as filed specifies the features that these embodiments have in common with the first embodiment (see para. [0102], [0103], and [0174]), in particular the provision of a negative honing and of a land whose widths are formed so as to gradually increase from the lowermost point of the cutter body toward the connecting portion. The skilled person does not derive from the application as originally filed, directly and unambiguously, that the shape of the land described for the first embodiment should be the same also for the second and third embodiments. Further, it is noted that the figures of the second and third embodiments are schematic and even if the land 35 in Fig. 16 (second embodiment) and the land 53 in Fig. 21 (third embodiment) seem to be straight lines, it cannot be inferred from these figures that the land is as a whole planar or protruding. As pointed out by the appellant it might be evident for the skilled person to keep the shape disclosed for the first embodiment. However, the question at issue is not whether it would be obvious for the skilled person to keep that shape, but whether for the skilled person there is no doubt that the claimed shape is implicitly or explicitly derivable from the originally filed documents for the second and third embodiments. The Board judges that this is not the case.

The appellant referring to common general knowledge of the skilled person further alleged that a land as such can only be planar or protruding and void of any recesses, but failed to provide supporting evidence. Hence, the Board can only concur with the Opposition Division in its decision that the land could indeed be provided partly or to some extent with some kind of recesses.

Finally, the appellant referring to the decision of the Enlarged Board of Appeal G 1/93 argued that the specific shape of the land (see features F5.7 and F10.12 of claims 5 and 10, respectively) did not provide a technical contribution to the subject matter of the claimed invention.

The Board disagrees. Clearly the shape of the land contributes to the geometry at the cutting edge and consequently influences the cutting behaviour of the claimed indexable milling cutter. A specific shape of the land represents thus a technical feature and consequently provides a technical contribution. Indeed and as an example, the gradually increasing of the width of the land (which is a feature defining to some extent the shape of the land) is a feature having an effect in the cutting resistance and the chipping resistance of the cutting edge (see e.g. para. [0036] of the application as filed). Similarly providing protrusions, flat parts or recesses to the land will have a technical effect in the cutting behaviour of the insert.

2. Regarding the auxiliary requests 0, 0a, 1(I) and 2 (Ia) the above presented considerations in respect of granted claims 5 and 10 apply to the subject-matter of claims 5 and 10 of all of these requests since they all specify a specific shape of the land for the generally

parallelogram and circular plate shaped inserts.
Therefore for the same reasons as for granted claims 5 and 10 the subject-matter of claims 5 and 10 of the auxiliary requests contravene the provisions of Article 123(2) EPC.

3. It follows that none of the requests of the appellant is allowable.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar:

The Chairman:



D. Magliano

G. Pricolo

Decision electronically authenticated