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**Datasheet for the decision  
of 22 February 2019**

**Case Number:** T 2145/15 - 3.2.08

**Application Number:** 08825882.7

**Publication Number:** 2167263

**IPC:** B23B51/02, B23C5/22, B23B27/16

**Language of the proceedings:** EN

**Title of invention:**  
A TOOL FOR CHIP REMOVING MACHINING AS WELL AS A BASIC BODY  
THEREFOR

**Patent Proprietor:**  
Sandvik Intellectual Property AB

**Opponent:**  
Iscar Ltd.

**Headword:**

**Relevant legal provisions:**  
EPC Art. 56, 123(2)

**Keyword:**

Inventive step - (yes)

Amendments - extension beyond the content of the application  
as filed - main request, claim 7 (yes)

**Decisions cited:**

G 0003/14

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 2145/15 - 3.2.08

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.08**  
**of 22 February 2019**

**Appellant:** Sandvik Intellectual Property AB  
(Patent Proprietor) 811 81 Sandviken (SE)

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**Representative:** Vossius & Partner  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 11 September  
2015 revoking European patent No. 2167263  
pursuant to Article 101(2) EPC.**

**Composition of the Board:**

**Chairwoman** P. Acton  
**Members:** M. Foulger  
Y. Podbielski

## Summary of Facts and Submissions

- I. With the decision posted on 11 September 2015, the opposition division revoked the European patent No. 2 167 263. The opposition division found that the subject-matter of claim 1 lacked an inventive step in view of D2 (US 6,892,831 B2) and D4 (US 6,312,201 B1).
- II. The appellant (patent proprietor) filed an appeal against this decision.
- III. Oral proceedings were held before the Board on 22 February 2019.
- IV. The appellant requested that the decision under appeal be set aside and the patent be maintained as granted (main request) or, as an auxiliary measure, that the patent be maintained on the basis of one of auxiliary requests 1 and 2, filed with letter dated 11 December 2018, or one of auxiliary requests 3-5 filed with the statement setting out the grounds of appeal dated 14 January 2016.

The respondent (opponent) requested that the appeal be dismissed.

- V. a) Main request

Claim 1 reads as follows (feature references in bold added by the Board):

" **(a)** A long narrow basic body for tools for chip removing machining, **(b)** comprising an envelope surface (8), which is concentric with a centre axis (C), and **(c)** two opposite ends (6,7), as well as **(d)** a first seating (9) formed in one end (6) for the receipt of a

male-like coupling element, and being composed of **(e)** a primary part body (11) **(f)** as well as a secondary part body (12), which includes said first seating (9), wherein **(g)** the two part bodies (11,12) are interconnected via a coupling, which includes **(h)** a second seating (15) in the secondary part body (12), as well as **(i)** a male element (16) that is formed on the primary part body (11) and has **(j)** one or more precision machined flank surfaces (21,22) that are **(k)** arranged to apply, together with one or more co-operating and likewise precision machined flank surfaces (18,19) of the second seating (15), joining axial forces to the part bodies by turning the same in relation to each other, characterized in that **(l)** the primary part body (11) is composed of cemented carbide or a similar first material having a first, high modulus of elasticity, and **(m1)** the secondary part body (12) is made of steel, **(m2)** having a second modulus of elasticity, which is considerably lower than that of the first material."

Claim 7 reads:

A tool for chip removing machining, comprising a loose top (2) having a first male element (4) formed in one end of the loose top (2), which is connected to the first seating (9) of the long narrow basic body (1) according to claim 1.

b) Auxiliary request 1

Claim 1 of the main request is unchanged.

Claim 7 reads as follows (additions underlined and deletions struck through when compared to the main request):

"A tool for chip removing machining, comprising a long narrow basic body (1) according to claim 1 and a loose top (2) having a first male element (4) formed in one end of the loose top (2), which is connected to the first seating (9) of the long narrow basic body (1) ~~according to claim 1.~~"

VI. The following documents are relevant to this decision:

D1: US 1,477,855 A  
D2: US 6,892,831 B2  
D3: WO 02/14005 A1  
D4: US 6,312,201 B1  
D12: GB 2315777 A

VII. The respondent argued essentially as follows:

a) Main request

i) Claim 1 - novelty

D1 disclosed a long narrow basic body with the same geometry as that claimed. Claim 1 did not specify simply a cemented carbide but a cemented carbide or a similar first material. This construction allowed the scope of the claim to be interpreted broadly and thus the subject-matter of claim 1 was not new.

ii) Claim 1 - inventive step

*D2 as closest prior art:*

D2 was closest prior art and disclosed all features of claim 1 with the exception of features (1) and (m2).

The problem to be solved was to provide suitable

materials for the long narrow basic body disclosed in D2. In particular, the skilled person would look for materials with sufficient rigidity to avoid "walking" of the drill.

D4 concerned a long narrow basic body which had a similar geometry to that of D2. D4 taught further that the primary part body should be composed of cemented carbide (see col. 1, l. 19 - 20). Similarly, D3 also taught the use of cemented carbide, see p. 5, l. 10 - 11.

Drilling a blast furnace tap-hole was no more dangerous than conventional machining operations. The risk of breakage of the primary part body would not therefore deter the skilled person from using cemented carbide.

The skilled person would select the above material with a reasonable expectation of success in order to solve the above problem. They would thereby arrive at the subject-matter of claim 1 without the exercise of inventive activity.

*D1 as closest prior art:*

D1 concerned a drill for drilling rocks. The subject-matter of claim 1 differed, if at all, from this known long narrow body by features (1) and (m2).

The problem to be solved was to select a material which could provide vibration dampening.

It was generally known to use cemented carbide for drilling rocks, see e.g. D12, p. 1, l. 12 - 20 and l. 25. The selection of this material for the primary part body of D2 would not require the exercise of inventive

activity.

Thus, the subject-matter of claim 1 did not involve an inventive step.

ii) Claim 7 - added subject-matter

Claim 7 as granted referred to a first male element which was "connected to the first seating (9) of the long narrow basic body (1) according to claim 1." This formulation meant that the seating is included within the scope of the claim. However, only the seating of the long narrow body was mentioned in the reference to claim 1 and this was part of the secondary part body which was made of steel. The claim did not therefore include the primary body which was made of cemented carbide or a similar material. Such a primary body made of cemented carbide or a similar material was, however, an essential feature of the invention as originally disclosed (see p.4, l. 13-26). To omit this departed from the original disclosure and thus infringed Article 123(2) EPC.

b) Auxiliary request 1

i) Admission into the proceedings

This request could have been filed in proceedings before the opposition division. It was thus late-filed and as such should not be admitted into the proceedings.

ii) Claim 1

As this claim was the same as for the main request, the above arguments also applied.



iii) Claim 7

No further objections were raised.

VIII. The appellant argued essentially as follows:

a) Main request

i) Claim 1 - novelty

D1 did not disclose that:

(1) the primary part body is composed of cemented carbide or a similar first material having a first, high modulus of elasticity, and  
(m2) the secondary part body having a second modulus of elasticity, which is considerably lower than that of the first material.

There was neither a disclosure of cemented carbide nor a similar material in D1. As the modulus of elasticity of the first material was not known, it was also not disclosed whether that of the material of the secondary part body was lower or not.

The subject-matter of claim 1 was therefore new.

ii) Claim 1 - inventive step

*D2 as closest prior art:*

D2 concerned a tap-hole drill for a blast furnace. The tap-hole was where the iron flowed out of the bottom of the furnace. After the iron was tapped, the tap-hole was closed again using clay. To open the tap-hole it was therefore necessary to drill through the clay and

solidified iron. It was immediate evident that this was a dangerous process due to the close proximity of molten iron.

The invention described in D2 solved the problem of the drill "walking" by means of the pilot drill. Moreover, in the embodiment of fig. 4, D2 proposed using steel for the collar - see claim 14 - thus this would be the obvious choice for the shaft as well. The skilled person would have had no motivation to look at D4 or D3 because these documents concerned drills for precision drilling and were thus from a different technical field.

*D1 as closest prior art:*

D1 concerned a drill for percussive drilling and the long narrow body was designed to transmit impulses. D1 did not disclose features (1) and (m2) of claim 1.

Although it was known to use cemented carbide for the cutting parts of rock drills (c.f. D12), there was no hint to use it for the long narrow body of D1. Moreover, in D1 it was the secondary part body 12 that should have shock-absorbing properties (see fig. 2). Thus, if the skilled person had considered cemented carbide, it is this part that would have been the obvious choice rather than the primary part as claimed. Hence, the skilled person would have had no motivation to arrive at the subject-matter of claim 1.

The subject-matter of claim 1 was thus new and involved an inventive step.

ii) Claim 7 - Added subject-matter

The objection to this claim rather concerned a lack of clarity in the claim as granted. As this was not a ground of opposition, this objection was not admissible.

b) Auxiliary request 1

i) Admission into the proceedings

This request was filed in reaction to the Board's communication and thus the Board should admit the request into the proceedings.

ii) Claim 1 - Novelty and inventive step

As claim 1 was identical to that of the main request, the above arguments concerning novelty and inventive step were equally valid. Thus, the subject-matter of this claim was new and involved an inventive step.

iii) Claim 7 - Added subject-matter

The amendment to this claim overcame the objections raised by the respondent and therefore the request fulfilled the requirements of Article 123(2) EPC.

## Reasons for the Decision

1. Main request

1.1 Claim 1 - Novelty

D1 discloses (references in bold refer to D1):

A long narrow basic body **(11 and 12)** for tools for chip removing machining **(clearly the tool bit (10) attached to the body is not suitable for chip removing, however the long narrow body - as claimed - is a body which is suitable for the claimed use),**

comprising an envelope surface, which is concentric with a centre axis **(see fig. 1)**, and

two opposite ends **(see fig. 1)**, as well as

a first seating formed in one end **(24)** for the receipt of a male-like coupling element **(14)**, and being composed of

a primary part body **(11)**

as well as a secondary part body **(12)**, which includes said first seating,

wherein the two part bodies are interconnected via a coupling, which includes

a second seating **(24)** in the secondary part body, as well as

a male element **(15)** that is formed on the primary part body **(11)** and has

one or more precision machined flank surfaces **(threads)** that are

arranged to apply, together with one or more co-operating and likewise precision machined flank

surfaces of the second seating, joining axial forces to the part bodies by turning the same in relation to each other **(i.e. the thread connection shown in fig. 2)**,

the secondary part body **(11)** is made of steel, **(p. 8, 1. 30-37 - "chrome-nickel steel")**.

D1 does not disclose that

(1) the primary part body is composed of cemented carbide or a similar first material having a first, high modulus of elasticity, and

(m2) the secondary part body having a second modulus of elasticity, which is considerably lower than that of the first material.

It is correct that the wording of claim 1 is not restricted to cemented carbide but rather also encompasses materials similar to cemented carbide.

D1 does not however disclose the material of the primary part body and thus also not cemented carbide or anything similar to cemented carbide. Consequently the subject-matter of claim 1 is new with respect to D1.

## 1.2 Claim 1 - Inventive step

### 1.2.1 D2 as closest prior art:

It is common ground that D2 discloses (references in bold refer to D2):

A long narrow basic body **(12 and 16)** for tools for chip removing machining **(col. 3, 1. 1 - 3 "boring through a solid body")**, comprising an envelope surface, which is concentric with a centre axis **(see figs.)**, and two opposite ends **(see figs.)**, as well as a first seating formed in one end **(36)** for the receipt of a male-like coupling element **(64)**, and being composed of

a primary part body (12)  
as well as a secondary part body (16), which includes  
said first seating,  
wherein the two part bodies (12, 16) are interconnected  
via a coupling, which includes  
a second seating (40) in the secondary part body (16 -  
**col. 3, l. 15 - 17**), as well as  
a male element (56) that is formed on the primary part  
body (12) and has  
one or more precision machined flank surfaces that are  
arranged to apply, together with one or more co-  
operating and likewise precision machined flank  
surfaces of the second seating, joining axial forces to  
the part bodies by turning the same in relation to each  
other (**i.e. the thread connection shown in fig. 2**),  
the secondary part body (16) is made of steel, (**col. 3,  
l. 8/9 - "rigid metallic material" in this context is  
implicitly steel**).

It was not contested that the subject-matter of claim 1  
differs from this known tool in that:

- (1) the primary part body is composed of cemented  
carbide or a similar first material having a first,  
high modulus of elasticity, and
- (m2) the secondary part body having a second modulus of  
elasticity, which is considerably lower than that of  
the first material.

The problem to be solved is to provide suitable  
materials for the long narrow basic body disclosed in  
D2.

It is correct, as argued by the respondent, that using  
cemented carbide would provide a stiffer primary part  
body. However, D2 already solves the problem of the  
drill "walking" by using a pilot drill. Thus, the

skilled person would not be influenced in the choice of alternative materials by the desire to solve the problem of the drill "walking".

Furthermore, the skilled person would recognise that drilling a blast furnace tap-hole is a hazardous operation and a broken drill could lead to severe problems. Cemented carbides may be very stiff but they can also be brittle. Thus, this would dissuade the skilled person from using such a material for the drill of D2.

Moreover, in the embodiment of fig. 4, D2 already proposes using steel (see claim 14) for the primary part body. Thus, when confronted with the problem of providing suitable materials for the long narrow body the skilled person would regard steel as the obvious choice for the embodiment of fig. 2 of D2.

Given the above, the skilled person would not arrive at the subject-matter of claim 1 without the exercise of inventive activity when starting from the long, narrow body of D2 as closest prior art.

#### 1.2.2 D1 as closest prior art:

As discussed above, the subject-matter of claim 1 differs from the long, narrow body known from D1 in that:

- (1) the primary part body is composed of cemented carbide or a similar first material having a first, high modulus of elasticity, and
- (m2) the secondary part body has a second modulus of elasticity, which is considerably lower than that of the first material.

The problem to be solved is to select an appropriate material to provide improved vibration dampening in the drill.

It is correct that cemented carbides are used in rock drilling applications, as shown by D12. However, in these applications they are used for the actual cutting tool, i.e. the cutting insert, and not for the long narrow body; the cutting inserts and the long, narrow body being of different dimensions and subject to different forces.

Moreover, in D1 it is the secondary part body 12 that is required to have vibration damping properties, see fig. 1. Thus, if the skilled person were to recognise that cemented carbide provided the desired improved vibration dampening, then the logical step would be to make the secondary part body out of cemented carbide.

The argument that the skilled person would make the primary part body 11 out of cemented carbide because it is longer is not persuasive. This assertion is not supported by the description which does not mention the length of the respective parts. Moreover, it contradicts the clear disclosure of fig. 1 according to which the secondary part 12 has a shock absorbing function.

Hence, there is no hint in the cited prior art that would incite the skilled person to move away from the materials disclosed in D1 and to arrive at the subject-matter of claim 1.

Consequently, the subject-matter of claim 1 involves an inventive step.



1.3 Claim 7

Claim 7 as granted refers to a first male element which was "connected to the first seating (9) of the long narrow basic body (1) according to claim 1." This formulation indicates that the seating is included within the scope of the claim. However, only the seating is mentioned which was part of the secondary part body made of steel. The claim does not therefore include the primary body which was made of cemented carbide or similar. This is an essential feature of the invention as originally disclosed as is evident from the summary of general idea of the invention (see p.4, l. 13-26). To omit this departs from the original disclosure and thus infringes Article 123(2) EPC.

It is correct that claim 7 can also be read as including all of the features of claim 1. This reading would not extend beyond that of the application as originally filed. It is moreover correct that these two readings are ambiguous which is indeed a lack of clarity and thus cannot now be examined (G 3/14). However, one plausible reading of claim 7, as discussed above, goes beyond that of the application as originally filed. In the current case, the Board sees no reason not to give the claims their broadest reasonable interpretation. Thus claim 7 does not comply with Article 123(2) EPC.

2. Auxiliary request 1

2.1 Admission into the proceedings

This request was filed in reaction to the Board's communication some 2 months prior to the oral proceedings and is of low complexity. It overcame the

objection raised by the Board and raised no new objections. Under these circumstances, the Board decided to admit the request into the proceedings.

2.2 Claim 1

As discussed above for the main request, the subject-matter of this claim is new and involves an inventive step.

2.3 Claim 7

This claim is fully dependent on claim 1. It thus includes all essential features of the invention as originally disclosed. Its subject-matter does not therefore extend beyond that of the application as originally filed (Article 123(2) EPC).

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Opposition Division with the order to maintain the patent as amended in the following version:
  - Claims 1-12 according to auxiliary request 1 filed with letter dated 11 December 2018
  - Description: columns 1-7 of the patent specification
  - Drawings: figures 1-6 of the patent specification.

The Registrar:

The Chairwoman:



C. Moser

P. Acton

Decision electronically authenticated