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**D E C I S I O N**  
**of 20 January 2004**

**Case Number:** T 1087/01 - 3.2.1

**Application Number:** 93911048.2

**Publication Number:** 0594828

**IPC:** B21B 1/04

**Language of the proceedings:** EN

**Title of invention:**

Method and apparatus for intermediate thickness slab caster  
and inline hot strip and plate line

**Patentee:**

TIPPINS INCORPORATED

**Opponent:**

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DANIELI & C. OFFICINE MECCANICHE SpA  
SMS Schloemann-Siemag AG  
Mannesmann AG

**Relevant legal provisions:**

EPC Art. 100(c), 111(1), 113(1), 123(2)  
EPC R. 67, 68(2)

**Keyword:**

"Amendments - added subject-matter (yes - main request,  
auxiliary requests A, B; no - auxiliary request C)"

"Remittal for further prosecution (yes)"

"Basis of decisions - right to be heard (yes)"

"Reimbursement of the appeal fee (no)"

**Decisions cited:**

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**Catchword:**

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Case Number: T 1087/01 - 3.2.1

**D E C I S I O N**  
**of the Technical Board of Appeal 3.2.1**  
**of 20 January 2004**

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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted 24 July 2001  
revoking European patent No. 0594828 pursuant  
to Article 102(1) EPC.**

**Composition of the Board:**

**Chairman:** S. Crane  
**Members:** F. J. Pröls  
S. U. Hoffmann

## Summary of Facts and Submissions

I. European patent No. 0 594 828 was granted on the basis of European patent application 93911048.2 (published as WO-A-93/23182).

Claim 1 of the granted patent reads as follows:

A method of making coiled plate, sheet in coil form or discrete plate comprising the steps of:

- a) continuously casting a strand having a thickness between 89 mm and 140 mm (3.5 inches to 5.5 inches);
- b) shearing said strand into a slab (44, 46) of predetermined length;
- c) feeding the slab (44, 46) into an inline heating furnace (42);
- d) extracting said slab (44, 46) onto a continuous processing line including a hot reversing mill (56) having a coiler furnace (58, 60) on each of an upstream side and downstream side thereof;
- e) flat passing said slab (44, 46) back and forth through said mill (56) to form an intermediate product of a thickness sufficient for coiling after at least three flat passes through the mill;
- f) coiling said intermediate product in one of said upstream or downstream coiler furnaces (58, 60);
- g) passing said coiled intermediate product back and forth through said mill (56) to reduce said coiled intermediate product to

second intermediate product of further reduced thickness, said intermediate product being collected in and fed out of each of said coiler furnaces (58, 60) on each pass through the mill (56);

- h) further rolling said second intermediate product to reduce it to an end product of desired thickness, and
- i) finishing said end product into one of coiled plate, discrete plate or sheet in coil form,

**characterized in that** said further rolling of said second intermediate product into said end product is performed by passing said second intermediate product back and forth between said coiler furnaces (58, 60) of said hot reversing mill (56)."

II. The granted patent was opposed by the respondents I, II, III and IV (opponents I, II, III and IV) on the grounds that its subject-matter lacked novelty and/or inventive step (Article 100(a) EPC), that the invention was insufficiently disclosed (Article 100(b) EPC) and that it contained subject-matter extending beyond the content of the original application (Article 100(c) EPC).

III. With its decision posted on 24 July 2001 the Opposition Division revoked the patent. The reason given for the decision were that granted claim 1 (main request) contained added subject-matter since the requirement stated in feature (e) of the claim ("thickness sufficient for coiling after at least three flat passes" could not be derived from the original

disclosure; as for claims 1 according to the auxiliary requests A to H these likewise contained added subject-matter.

- IV. A notice of appeal against this decision was filed on 2 October 2001 and the fee for appeal paid at the same time. The statement of grounds of appeal was filed on 3 December 2001.
  
- V. Oral proceedings before the Board were held on 20 January 2004. Respondents IV were not present at the oral proceedings.
  
- VI. The appellants (patentees) requested that the decision under appeal be set aside and that the patent be maintained as granted (main request) or in the alternative in amended form on the basis of one of the sets of claims according to auxiliary requests A to Q, whereby auxiliary requests A to H were presented during the oral proceedings before the first instance on 24 July 2001 and auxiliary requests I to Q were filed with letter dated 19 December 2003. Furthermore, refund of the appeal fee was requested.

Claim 1 according to the auxiliary requests A to C differ from claim 1 according to the main request only in the sense that feature (e) of each claim 1 has been amended.

The respective feature (e) of claim 1 of these three auxiliary requests reads as follows:

Auxiliary request A:

"e) flat passing said slab (44,16) back and forth through said mill (56) to form an intermediate product of a thickness sufficient for coiling of about 25 mm (1 inch) after a minimum number of at least three flat passes through the mill (56);"

Auxiliary request B:

e) flat passing said slab (44,46) back and forth through said mill (56) to form an intermediate product of a thickness sufficient for coiling after three or four flat passes through the mill (56);"

Auxiliary request C:

e) flat passing said slab (44,46) back and forth through said mill (56) to form an intermediate product of a thickness sufficient for coiling of about 25 mm (1 inch) or less after three of four flat passes through the mill (56);"

VII. The main arguments put forward by the appellants can be summarised as follows:

The Opposition Division had failed to take proper account of how the person skilled in the art would understand the requirements set out in feature (e) of granted claim 1 as well as of each claim 1 according to the auxiliary requests A to H and therefore had based its finding of addition of subject-matter on the wrong supposition that the term "flat pass" can only be interpreted as a rolling pass in which the rolling

stock is flat before and after rolling so that consequently a rolling pass after which the rolled product is coiled is not a flat pass. When reading the original documents a person skilled in the art would recognise from what was said in the original description particularly on page 5, lines 1 to 3 and 14 to 16 and page 11, lines 28 to 33 and in the tables of the examples 1 to 4 that the term "flat pass" also includes rolling passes followed by coiling. The maximum number of flat passes necessary to reach at a slab thickness sufficient for coiling depends on the slab material, its start dimensions and temperature and is not restricted by the corresponding numbers given in the examples. As concern the term "thickness sufficient for coiling" it is clear for a skilled reader of the original documents that the slab necessarily must have a thickness "sufficient for coiling" before it is coiled.

The wording of original claim 1 in the then features (e) and (f) was indeed contradictory to the disclosure of the relevant features in the description and its examples. In all present versions of claim 1, however, this contradiction has been removed and the corresponding wording of claim 1 has been amended in the light of the disclosure of the description and its examples.

The Opposition Division committed a substantial procedural violation because the objection raised in the decision point 3.6 against the auxiliary requests F to H were not brought forward in the oral proceedings so that the appellants had been deprived of their right to be heard in accordance with Article 113(1) EPC.



Furthermore, the decision was contradictory in itself as concern the argumentation in its points 3.4 and 3.6. Reimbursement of the appeal fee is therefore justified.

VIII. The respondents requested that the appeal be dismissed and essentially replied as follows:

The method according to original claim 1 referred to no more than three flat passes of the slabs back and forth through the mill followed by a further rolling pass before the slabs are coiled. The original description was consistent with original claim 1, since the text on page 11, lines 28 to 32 also mentions "no more than three" initial passes of the slabs back and forth through the mill. The following sentence saying that the intermediate product is then coiled does not exclude an additional further pass of the slabs through the mill before coiling as set out in feature (f) of the original claim 1. However, this additional pass followed by the coiling step cannot be interpreted as being a flat pass which according to original claim 1, features (e) and (f) must be understood as a pass which neither starts nor ends with a coiled product. The original documents therefore only disclose a maximum of three flat passes. Thus, the term "after at least three flat passes" or "after 3 or 4 flat passes" as present in claim 1 according in the main request or in a number of the auxiliary requests infringed Article 123(2) EPC.

This is also true as concerns the feature "intermediate product of a thickness sufficient for coiling" as set out under (e) of claim 1. In the original documents the thickness of the slabs before coiling was restricted to a value of "about 1 inch or less". This value cannot be

replaced by the general term "sufficient for coiling" which allows any thickness of the coiled slab.

For these reasons the main request and the auxiliary requests are not allowable.

## **Reasons for the Decision**

1. The appeal complies with the formal requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is therefore admissible.

### *Extension of subject-matter*

#### 1.1 Original disclosure

- 1.1.1 The claimed method (all requests) is concerned with the continuous casting of slabs and their further processing in several steps in a so-called thin slab continuous hot strip mill. In all requests discussed at the oral proceedings, i.e. main request and auxiliary requests A to C the single point of issue was feature (e) in the precharacterising part of claim 1 which describes the processing of the slabs in the hot reversing mill having a coiler furnace on each of its downstream and upstream sides. The matter in dispute centres on the wording of feature (e) which concerns

- (i) the number of flat passes of a slab back and forth through the hot reversing mill before coiling and

(ii) the thickness of rolling stock i.e. the slabs before they are coiled for the first time in one of the coiler furnaces.

1.1.2 As concern these questions the originally filed documents (see PCT-publication WO-A-93/23182) reveal in the description on page 5, lines 1 to 3 that "The mill must have the capability of reducing the cast slab to a thickness of about 1 inch or less in 3 flat passes" and on page 5, lines 14 to 16 that "The slabs are reduced to about 1 inch or less in 3 flat passes on the hot reversing mill before starting the coiling..." and on page 11, lines 28 to 32 that "The slab after leaving walking beam furnace 42 is flat passed back and forth through hot reversing mill 56 in no more than three passes achieving a slab thickness of about 1 inch or less. The intermediate product is then coiled...". These results are in agreement with the examples (tables) 1, 2 and 4 disclosing that "coiling begins at pass number 3 CM3" and that the gauge (thickness) of the slabs before coiling is 0,8 (20,32), 1,0 (25,4) and 1,0 (25,4) inch (mm) respectively.

In the table of example 3, however, there is explicitly disclosed that "coiling begins at pass number 4 CM4" and that the gauge at pass number 4 (CM4 is 0,8 inch (20,32 mm) whereas at pass number 3 the slab thickness is still 1,2 inch (30,48 mm). This means that the number of flat passes before coiling is four if the term "flat pass" is defined in the same manner as it is described in the description on pages 5 and 11 as set out above, i.e. that a flat pass according to the original description constitutes a pass through the

mill starting from a flat uncoiled slab and ending with a coiled or uncoiled product.

Furthermore, the original documents of the patent in suit clearly lay down that the slab thickness before coiling occurs is about 1 inch or less and in the tables of the examples 1 and 3 the slab thickness is 0,8 inch (20,32 mm) and 1 inch (25,4 mm) in the examples 2 and 4.

1.1.3 Original claim 1 uses the term "flat pass" in feature (e) as follows:

"e) flat passing said slab back and forth through said mill to form an intermediate product of about 1 inch or less in thickness after no more than three passes through the mill"

This wording if considered isolated from the following text is still in accordance with the disclosure of the description and the examples as set out above. However, feature (e) and feature (f) of original claim 1 (which reads as follows: "f) passing said intermediate product through the mill to further reduce its thickness and coiling said intermediate product in one of said upstream or downstream coiler furnaces") when interpreted in combination with each other are inconsistent with the disclosure of the further original documents in requiring that already the last but one pass of the slabs through the mill before coiling must form a product of about 1 inch or less in thickness.

1.1.4 Notwithstanding this inconsistency of original claim 1 the wording of the features (e) and (f) does not necessarily restrict the term "flat passes" to such rolling passes which end in an uncoiled state as the opponents argue.

It follows from the above that the partly misleading wording of original claim 1 cannot undermine the meaning of the term "flat pass" which can be derived from the original description, namely a rolling pass starting from an uncoiled slab and ending coiled or uncoiled.

The Board therefore cannot agree with the opponents' assertions that a flat pass must be understood as a pass which neither starts nor ends with a coiled product. Insofar the Board is in accordance with the appellants' view.

1.1.5 However, as can be seen from above, the original disclosure generally restricts the number of flat passes, i.e. rolling passes before coiling occurs, to 3 or no more than 3 (see description on pages 5 and 11) and while allowing a number of 4 passes before coiling occurs as set out in example 3. There is certainly no disclosure that more than 4 flat passes before coiling may occur.

Thus it is apparent that the original application was concerned with imposing an upper limit on the number of flat passes, even though there is some inconsistency as to the value of that unit.

1.1.6 As to the thickness of the slabs before they are coiled, (i.e. after no more than 3 or 4 flat passes) the original documents continuously mention the value of "about 1 inch or less" (page 5, lines 1 to 3 and 14 to 16) and the values of 0,8 or 1 inch (examples 1 to 4). There are no indications as concern other values conditional on the stock material, its temperature and the coiling furnace.

1.2 Main request

In claim 1 as granted feature (e) claims the step of "flat passing said slab ... to form an intermediate product of a thickness sufficient for coiling after at least three flat passes ...".

From the above considerations it is apparent that there was no basis in the originally filed documents for the indications in the claim that

(i) the number of three flat passes is now a minimum, allowing obviously more than 3 or 4 flat passes and

(ii) the thickness of the slabs before coiling may take any value, provided that coiling is possible, which is nothing more than a truism.

It therefore follows that the subject-matter of the patent extends beyond that of the application as originally filed, in contravention of Article 123(2) EPC and the main request must be refused.

1.3 Auxiliary requests A and B

Claim 1 according to auxiliary request A replaces the wording "after at least three flat passes" by "after a minimum of at least three flat passes". This amended wording is also not allowable for the reasons set out above in paragraph 1.2.

In claim 1 according to auxiliary request B the inadmissible general definition for the thickness of the slabs "sufficient for coiling" is still present.

Thus, claim 1 according to auxiliary requests A and B still contains subject-matter extending beyond the content of the original application so that auxiliary requests A and B must be rejected.

1.4 Auxiliary request C

Auxiliary request C removes the inadmissible subject-matter in claim 1 as concerns the number of flat passes before coiling and the thickness of slabs before coiling occurs by restricting the corresponding wording in feature (e) to "a thickness sufficient for coiling of about 25 mm (1 inch) after three or four flat passes". As can be viewed from above (see paragraphs 1.1.4 and 1.1.6) these values satisfy the requirements of Article 123(2) EPC.

2. *Remittal*

In order to allow the parties fully to develop their arguments before two instances on the substantive merits of the claimed subject-matter, the Board makes use of its power under Article 111(2) EPC to remit the case to the Opposition Division for further examination on the basis of claim 1 according to auxiliary request C presented before the first instance on 24 July 2001.

3. *Refund of appeal fee*

3.1 The request for refund of appeal fee relates to the alleged failure of the Opposition Division to provide opportunity to the appellants for presenting comments before the refusal of the auxiliary requests as set out in point 3.6 of the decision under appeal.

3.2 The refusal of the auxiliary requests F to H is based on the Opposition Division's interpretation of the term "flat passes" as set out on page 2, paragraph 2 of the minutes in accordance with Rule 76(4) EPC. In particular the Opposition Division considered the last pass before coiling did not belong to the so-called "flat passes".

It is apparent from the minutes of the oral proceedings before the Opposition Division that the interpretation of the term "flat passes" was fully discussed and that the view of the Opposition Division was well known to the appellants see page 2, paragraph 2. The contention of the appellants that they had no opportunity to comment on this issue is therefore unjustified. The



fact that the Board has come to a different conclusion as to the meaning of the term is wholly immaterial in this context.

3.3 As concern the alleged contradictions in the reasons for the decision under appeal, which the appellants did not specify in detail, the Board can see nothing which might amount to a substantial procedural violation justifying the reimbursement of the appeal fee.

3.4 The request for refund of appeal fee is therefore refused.

## **Order**

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

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution.
3. The request for reimbursement of the appeal fee is refused.

The Registrar:

The Chairman:

S. Fabiani

S. Crane