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D E C I S I O N
of 23 November 1998

Case Number: T 0424/96 - 3.2.5

Application Number: 85302282.0

Publication Number: 0162555

IPC: B22F 3/22

Language of the proceedings: EN

Title of invention:
Production of metal strip

Applicant:
Mixalloy Limited

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0424/96 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 23 November 1998

Appellant: Mixalloy Limited
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 27 November 1995 refusing European patent application No. 85 302 282.0 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: A. Burkhart
Members: C. G. F. Biggio
M. Lewenton

Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal against the decision of the examining division refusing the European patent application No. 85 302 282.0.

II. The following prior art documents were considered in the appealed decision:

D1: FR-A-1 552 998,

D2: Ruge, J, Handbuch der Schweißtechnik, 2nd Edition, Springer Verlag 1980, pages 51-52,

D3: Schweißtechnik, (Berlin) 28 (1978), pages 487-489,

D4: US-A-3 335 002, and

D5: DE-A-2 315 647.

Independent Claim 1, as considered and refused by the examining division, reads as follows:

"A method of producing weld cladding, welding or brazing consumables, the method being characterised by the steps of producing a slurry of a suspension of a homogeneous mix of ductile metallic particles and a minor proportion of metallic and/or nonmetallic particles having chemical and/or physical properties different from those of the ductile metallic particles in a film forming cellulose derivative, depositing a quantity of this slurry onto a moving support surface to form a coating thereon, heating the coating to promote gelling and to dry the cellulose derivative to form a self-supporting green strip, removing the green strip from the surface, rolling the green strip to effect compaction of the ductile content of the strip,

sintering the compacted strip at a temperature at which the metallic particles coalesce to form a matrix containing dispersed therein either the unchanged particles of the additional metallic or nonmetallic particles or particles which are formed by their alloying with the matrix".

III. The examining division found that the subject-matter of Claim 1 did not involve an inventive step with respect to the disclosure of documents D1 and D3.

IV. The appellant argued essentially as follows:

D1 did not deal with welding consumables and the method disclosed therein did not comprise the steps of "homogeneous mix" and "heating the slurry to promote gelling of the cellulose derivative". Moreover, it should be noted that a long time period had lapsed between the publication date of D1 and the priority date of the pending application.

Documents D2 and D3 did not teach welding by use of strip electrodes produced by powder metallurgy (PM) techniques. D2 and D3, moreover, did not teach the production of consumables in the form of strips, as claimed in the pending application. On the contrary, D2 and D3 disclosed conventional sheathed electrodes comprising a quantity of metal powder enveloped within a tube of mild steel or the like.

Therefore, the method of Claim 1 was not rendered obvious by the teaching from documents D1, D2 and D3.

V. On 3 July 1998, the Board summoned the appellant to oral proceedings to be held on 20 November 1998.

In a communication joined to the summons, the Board expressed its opinion that the appellant's submissions in its statement of grounds of appeal were not such as to convince the Board to set aside the appealed decision.

VI. On 31 October 1998, the appellant informed the Board that he would not attend the scheduled oral proceedings and requested that the application be considered having regard to the documents submitted in support thereof.

VII. In summary, the appellant requested that the appealed decision be set aside and a patent be granted with Claim 1, as quoted in previous Item II.

Reasons for the Decision

1. *Novelty*

The method according to Claim 1 is novel, since none of the considered prior art documents discloses a method comprising all the method steps mentioned in said claim.

Novelty, in fact, was not disputed by the examining division.

2. *Inventive step*

The Board concurs with the finding of the examining division that document D3 discloses the closest prior art.

This document (the paragraph: "Einleitung", lines 1 to 30 thereof) deals with the limitations and the various problems involved by the welding of large surfaces, with electrodes produced by powder metallurgy (PM) techniques, and discusses (on lines 20 to 30) the specific limitations, difficulties and problems involved by the welding of large surfaces with wire electrodes.

Further, in the same paragraph "Einleitung" (from line 30 till the end thereof), document D3 deals with

- the advantages involved by the welding of large surfaces with strip or band electrodes,

- the difficulties encountered in and the high expenses involved by producing both wire and strip or band electrodes, by means of traditional techniques, and,

- the advantages of strip or band electrodes, recently produced by means of PM techniques which include rolling and sintering of suitable mixtures of metallic powders, which are said to satisfy the requirements of welding large surfaces.

According to the above, the Board does not agree with the appellant's interpretation of the penultimate sentence of paragraph 3.1 of document D3, which is inferring that the word "Zusatzwerkstoffe" should be construed as meaning "filler material", i.e. "the powdered content of sheathed electrodes", and therefore pointed to "sheathed electrodes" produced by means of traditional techniques.

Such an interpretation would, in fact, be in contradiction with that part of document D3 (paragraph "Einleitung", lines 39 to 41) which deals with the difficulties encountered in and the high expenses involved by producing both wire and strip or band electrodes, by means of traditional techniques.

Therefore, document D3 discloses a method for producing welding or cladding consumable in the form of strip or band electrodes, by means of PM techniques, which includes rolling and sintering of suitable mixtures of metallic powders and plastic binding elements; said method being substantially the same as that claimed by Claim 1, although not all the method steps mentioned by said claim are expressis verbis disclosed by D3.

The Board also concurs with the view of the examining division that the person skilled in the art, faced with the problem of finding a detailed PM strip making process for producing strips of welding consumables, would turn to document D1, which discloses a process comprising the steps of mixing of powder components, making a green strip and sintering.

The appellant pointed out that the method of the pending application does not only use the process of D1 as such, but, that in order to achieve suitable welding products, said know process had to be modified by the addition of the steps of "homogeneous mix" and "heating the slurry to promote gelling of the cellulose derivative", which are claimed in Claim 1.

The Board cannot accept this contention, for the following reasons:

- With respect to the feature "homogeneous mix", reference is made to D3 (page 487, right-hand column, lines 1 to 3), where such an homogeneous mix is expressly recommended.

- With respect to the feature "...to promote gelling...", it is pointed out that "gelling" is an inherent intermediate step of "heating the cellulose containing slurry in the drying oven"; said step being present in the method disclosed by document D1.

The appellant pointed also out that a long time period had lapsed between the publication date of D1 and the priority date of the pending application.

In this respect, it has to be noted that the closest prior art on file, i.e. document D3, has been only known some 5½ years before the priority date of the pending application and that 5½ years cannot be considered such a long time period as to supply an evidence in support of an inventive step.

Therefore, the Board concurs with the finding of the examining division that the method according to Claim 1 does not involve an inventive step with respect to the disclosures and teachings of documents D1 and D3.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

A. Townend

The Chairman:

A. Burkhart