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D E C I S I O N
of 2 April 1997

Case Number: T 0516/93 - 3.3.2

Application Number: 88402030.6

Publication Number: 0302791

IPC: C04B 35/64

Language of the proceedings: EN

Title of invention:

A process for producing an elongated sintered article

Applicant:

Sumitomo Electric Industries Limited

Opponent:

-

Headword:

Elongated sintered article/SUMITOMO

Relevant legal provisions:

EPC Art. 54, 113(1)

EPC R. 67

Keyword:

"Novelty (yes after amendment)"

"Refund of appeal fee (no)"

Decisions cited:

T 0162/82, T 0640/91, T 0951/92

Catchword:

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Case Number: T 0516/93 - 3.3.2

D E C I S I O N
of the Technical Board of Appeal 3.3.2
of 2 April 1997

Appellant: Sumitomo Electric Industries Limited
No. 15, Kitahama 5-chome
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Osaka-shi
Osaka 541 (JP)

Representative: Ballot, Paul Denis Jacques
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 28 August 1992
refusing European patent application
No. 88 402 030.6 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P. A. M. Lançon
Members: M. M. Eberhard
J. van Moer

Summary of Facts and Submissions

- I. European patent application No. 88 402 030.6 was refused by the examining division. The decision was based upon the amended claims 1 to 19 filed on 26 May 1992.
- II. The grounds for the refusal were that amended claim 1 did not meet the requirement of novelty with respect to the disclosure of either of the citations D1 and D2, namely EP-A-0 296 477 and EP-A-0 097 306 respectively. The examining division held that example 2 of D1 fully anticipated the process of claim 1 since, in particular, the copper pipe was deformed at 950°C, ie at a temperature lying above the lower temperature limit required in claim 1. Furthermore, the process of claim 1 was not novel over example 1 of D2. As according to this example full density had been reached, the metal powder had consolidated to form a dense body as in the usual concept of sintering. The two passes at a temperature of 1650°F (900°C) anticipated the hot-plastic deformation at a temperature higher than the recrystallisation temperature and the heat treatment at a sinter temperature respectively.
- III. The appellants lodged an appeal against this decision and filed a set of amended claims as main request together with the statement of grounds of appeal. Reference was also made to a second set of amended claims as auxiliary request, which was filed on 24 June 1996.

In a communication dated 12 July 1996, the board informed the appellants of its provisional opinion about the claims according to the main and auxiliary requests. The appellants' attention was also drawn to

an additional document found when checking the priority documents relating to D1 in the corresponding file No. 88 109 541.8, namely Advanced Ceramic Materials, Ceramic Supraconductors, vol. 2, No. 3B, July 1987, R.W. McCallum et al., "Problems in the production of $\text{YBa}_2\text{Cu}_3\text{O}_x$ superconducting wire", pages 388-400 (hereinafter D5). The appellants were informed that in view of the relevance of this new citation, the board contemplated remitting the case to the first instance. Several sets of amended claims were submitted in the course of the appeal procedure in response to communications from the board. On 15 February 1997, the appellants filed amended claims 1 to 13 as sole request in substitution for the earlier sets of claims. Independent claim 1, which is followed by dependent claims 2 to 13, reads as follows:

"A process for producing a wire of oxide superconductor by the steps comprising filling a pipe made of Ag with powder of oxide superconductor, carrying out plastic deformation of the Ag pipe filled with the oxide superconductor powder and then subjecting the deformed Ag pipe filled with the oxide superconductor powder to a heat-treatment at a sinter temperature of the oxide superconductor powder, characterized in that said plastic deformation includes at least one hot-plastic deformation which is carried out at a temperature of at least 750°C but lower than the melting point of silver by 10°C or more."

IV. The appellants relied mainly upon the following arguments:

Concerning the issue of novelty, it was argued that D1 disclosed in examples 3 to 8 a process for producing a superconductive oxide wire by plastic deformation followed by sintering, the said wire consisting of a silver pipe filled with superconductive oxide powder.

D1 was silent about the hot-plastic deformation and referred only to extrusion which was known to be usually performed at room temperature. D2 disclosed a process for forming an elongated rod consisting of a metal sheath made of steel, copper or copper alloy, and being filled with copper powder. D2 neither mentioned silver as metal for the sheath nor superconductive oxides as filling material. Therefore, claim 1 was new over the disclosure of either of these documents. The appellants further contended that they were not given the opportunity to present amended claims after their response to the first communication and requested reimbursement of the appeal fee for this reason.

- V. The appellants requested that the case be remitted to the first instance for further prosecution and the appeal fee reimbursed.

Reasons for the Decision

1. The appeal is admissible.
2. The amended claims 1 to 13 are considered to meet the requirements of Article 123(2) EPC. Claim 1 is based on the combination of claims 1 and 3 as originally filed with features disclosed in the original description and in original claim 20. In particular, it is indicated in the latter that the metal pipe is made of silver, and the limitation of the process to the production of an "oxide superconductor wire" is supported by the disclosure at page 1, third paragraph, or page 5, lines 6-7 of the application as filed. The temperature range for the hot-plastic deformation is directly and unambiguously derivable from the disclosure in the original claims 2 and 3 and at page 23 of the description (see "sample No. Ag-20")

which was subjected to a hot-plastic deformation at 750°C). Claims 2 to 6 and 9 are based upon the original claims 4 to 8 and 11 respectively. Claims 7 and 8 essentially correspond to original claims 9 and 10 and contain additional information stated at page 8, lines 2-3 and page 7, line 2 of the description. The subject matter of claims 10 and 11 is directly derivable from the original claims 13, 14, 17 and page 11 of the application as filed (second and third paragraphs).

3. D1 discloses a method for manufacturing a superconductive oxide wire, comprising the steps of filling a pipe made of a metal extending in the direction of the longitudinal axis thereof with a powder of a superconductive oxide material, forming the resulting conductive composite body into a wire by wire working and/or rolling in the direction of the longitudinal axis and heat treating the wire so as to sinter the superconductive oxide material (see claim 4). The body may be formed into a wire by drawing and/or rolling (col. 3, lines 4-7). In examples 3 to 6 of D1 a powder of a superconductive oxide material is charged into a silver pipe and the resulting conductive body is subjected to repeated extrusion to gradually reduce its diameter and form a wire. The latter is then cold rolled to obtain a tape-shaped wire which is subsequently sintered at a temperature of 910°C for several hours in an oxygen atmosphere and then gradually cooled to room temperature. In examples 7 and 8, the silver pipe is filled with the superconductive oxide powder and the composite body is subjected to extrusion and then to the sintering step. The process used in these examples does not involve a hot-plastic deformation at a temperature within the range defined in claim 1.

In example 2, a mixture of powders of barium oxide, yttrium oxide and copper oxide is charged into a copper pipe (inner diameter 20 mm). The pipe filled with the mixture is gradually wire-formed while being subjected to heat treatment at a temperature of 950°C in an argon atmosphere, thereby forming the pipe into a wire of 1 mm diameter and obtaining a conductive composite body. The latter is then heat treated at 950°C in an argon atmosphere for five hours. Thus, the process of example 2 comprises a hot-plastic deformation of the copper pipe containing the powder mixture, at a temperature which falls within the range defined in amended claim 1 as well as a subsequent sintering step. The claimed process differs from this process in that the hot-plastic deformation is applied to a silver tube filled with a superconductive oxide powder. It follows from the above that the process of amended claim 1 is novel over D1.

D2 discloses a process for producing a sheathed dispersion strengthened metal rod or tube. The dispersion strengthened metal powder is densified in a metallic sheath or container by size reduction in a plurality of stages, some or all of which may be carried out at elevated temperature, e.g. 1000°F (538°C) or higher, in particular 1450-1650°F (788-899°C), the said stage size reduction being preferably performed until full density is obtained (see page 1, lines 1-4, page 2, lines 25-29, page 4, lines 1-28, page 22, lines 21-26). The dispersion strengthened metal is particularly copper, but metals such as nickel, iron, silver and steel may also be used (see pages 6 and 7). The sheath-forming container is made of a metal which, during the size reduction operation, develops a cold worked tensile strength relatively close to that of the ultimate tensile strength of the dispersion strengthened metal core. The container is formed for example of a ferrous material such as steel,

stainless steel, nickel, cobalt, copper or copper/nickel alloys (see page 8, lines 10-25, Examples, and claims 23-29). As pointed out by the appellant, this document neither discloses the use of silver as metal for the sheath-forming tube nor the use of a superconductive oxide material for the filling powder to be introduced into the tube. Therefore, the process of amended claim 1 is new over D2.

Claim 1 also meets the requirement of novelty over the citations of the search report and D5.

4. Taking into account that, on the one hand, only novelty had been examined by the examining division, and, on the other hand, the new citation D5 has been introduced into the procedure at the appeal stage because of its relevance to the claimed subject matter, the board finds it appropriate to remit the present case to the first instance for further prosecution and thus to allow the corresponding appellants' request.

5. Pursuant to Rule 67 EPC, reimbursement of the appeal fee is ordered where the appeal is deemed to be allowable, if such reimbursement is equitable by reason of a substantial procedural violation. It follows from the above that the appeal is allowable. In support of their request for refund of the appeal fee the appellants merely argued that they were not given the opportunity to present amended claims after their response to the first communication.

Neither Article 113(1) nor Article 96(2) EPC requires that the applicants be given a repeated opportunity to comment on the examining division's submissions so long as the decisive objections against the grant of a patent remain the same. The expression "as often as necessary" in Article 96(2) indicates that the examining division has a discretion in each individual

case as to whether or not to invite further observations from an applicant before issuing a decision. In particular, this discretion should be exercised in favour of inviting further observations if there is a reasonable prospect that such an invitation could lead to the grant of the patent application. Refusing a patent application after a single communication would constitute a substantial procedural violation in particular if the decision of refusal contravened the provisions of Article 113(1) EPC (ie if the general procedural principle of "a right to be heard" were not respected) or if the examining division had exercised its discretion in an unreasonable way or taking into account the wrong principles (see in particular T 162/82, OJ EPO, 1987, 533; T 640/91, OJ EPO, 1994, 918; and T 951/92, OJ EPO, 1996, 53).

In the present case, the first communication indicates inter alia that the subject matter of claims 1 to 20 as filed is not new over D1 since it is fully anticipated by example 2 of D1 and that claims 1 to 12 also appear to lack novelty over example 1 of D2. In reply thereto, the appellants filed amended claims with an amended claim 1 corresponding to a combination of the original claims 1 and 2, which were both said to lack novelty in the first communication. They submitted in substance that amended claim 1 appeared to be new since neither D1 nor D2 taught a process according to the preamble of claim 1 and comprising the features recited in the characterising part thereof. The appellants gave no further explanation as to why they considered that the two cited examples did not disclose the said features.

A comparison of the first communication with the subsequent decision of refusal shows that there is no essential difference between the reasonings put forward therein as regards lack of novelty. The decision contains some additional explanations about the

temperature of the hot plastic deformation in example 2 of D1 and in example 1 of D2; however the first communication already clearly set out the essential legal and factual reasoning leading to the finding in the subsequent decision that the subject matter of amended claim 1 (ie original claims 1 and 2) lacked novelty over the teaching of D1, example 2, or D2, example 1. This was not contested by the appellants in their reply to the communication of the board. The general procedural principle of "a right to be heard" was thus not violated. Furthermore, the board cannot derive from the particular circumstances of this case, in particular from the content of the first communication, the appellants' reply and the appealed decision, that the examining division has exercised its discretion on the basis of wrong principles or in an unreasonable way.

For the preceding reasons the board has come to the conclusion that no substantial procedural violation took place. Therefore, the request for refund of the appeal fee must be refused.

6. In view of the outcome of the present decision, it was not necessary to hold oral proceedings, since the latter were requested only if the amended set of claims were to be refused.

Order

For these reasons it is decided that:

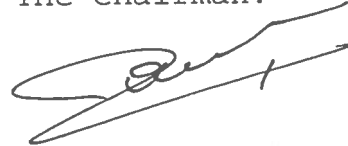
1. The decision under appeal is set aside.
2. The case is remitted to the examining division for further prosecution on the basis of claims 1 to 13 filed on 15 February 1997.
3. Reimbursement of the appeal fee is refused.

The Registrar:



P. Martorana

The Chairman:



P. A. M. Lançon

