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**Datasheet for the decision
of 22 September 2021**

Case Number: T 0536/19 - 3.3.05

Application Number: 06747669.7

Publication Number: 1907606

IPC: C25C7/00, C25C3/08, C25C3/12

Language of the proceedings: EN

Title of invention:
A METHOD AND A PREBAKED ANODE FOR ALUMINIUM PRODUCTION

Patent Proprietor:
NORSK HYDRO ASA

Opponent:
Rio Tinto France SAS
Rio Tinto Alcan International Limitée

Headword:
Prebaked Anode / Norsk Hydro

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
Amendments - disclosure in drawings

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
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Case Number: T 0536/19 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 22 September 2021

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 21 December
2018 rejecting the opposition filed against
European patent No. 1907606 pursuant to Article
101(2) EPC.**

Composition of the Board:

Chairman E. Bendl
Members: J. Roider
 P. Guntz

Summary of Facts and Submissions

I. The appeal lies from the opposition division's decision to reject the opposition.

II. In the decision under appeal, the requirements of Article 123(2) EPC, *inter alia*, were considered to be met, and the following document was cited:

D3 Moxnes B.P. *et al.*, Hydro Aluminium AS, "How to obtain open feeder holes by installing anodes with tracks", Light Metals 1998, pp. 247-255

III. Claim 1 of the patent as granted (main request) reads:

*"1. A method of producing aluminium in an Hall-Héroult cell with prebaked carbon anodes, where the anodes have one or more slots in its wear (bottom) surfaces for gas drainage,
characterised in that
the gas drainage is performed by one or more slots being 2-8 millimetres wide, where said slot has a cantilevered bottom $> 0^\circ$ and $< 10^\circ$ and extends from end to end at the bottom of said prebaked anode."*

IV. Claim 1 of auxiliary request 1 is based on claim 1 of the main request with the slot width restricted to a range of 3-8 mm.

V. Claim 1 of auxiliary request 2 is based on claim 1 of the main request with the slot width restricted to 3 mm.

VI. The arguments of the appellant (opponent) on added subject-matter can be summarised as follows.

The amendment "... and extends from end to end ..." contained in claim 1 was extracted from Figure 1 of the patent as originally filed. However, Figure 1 was an example which showed a number of further features, for instance, that straight slots were arranged parallel to the longer side of an anode in the form of a parallelepiped and that the slot bottom had a specific inclination.

The wording of claim 1 allowed also for an arrangement with a slot in the diagonal direction as, for instance, disclosed in D3, page 250, right-hand column or a slot parallel to the shorter side which would result in an anode draining the gas bubbles towards the longer edge. However, as confirmed by the respondent during the oral proceedings, such an arrangement would not work properly. Therefore, the orientation of the slots with respect to the parallelepiped could not be generalised, meaning that the requirements of Article 100 (c) EPC were not fulfilled.

The amendments of the auxiliary requests did not address these deficiencies. Thus, they infringed the requirements of Article 123(2) EPC for the same reason.

VII. The arguments of the respondent (proprietor) on added subject-matter can be summarised as follows.

At the date of filing, only cuboid anodes existed, and the skilled person would have understood that slots extending from one end to the other could only extend along the long side of the anode. Indeed, the "end" of such a cuboid anode could only be the side with the smaller face.

Moreover, the skilled person knew that several anodes would be arranged as exemplified in D3, Figure 7 with a feeder channel in the centre. Slots in parallel to the shorter side of the anode resulted, in such an arrangement, in a number of problems because the CO₂ formed during electrolysis would be drained towards the centre channel. The skilled person would hence not have considered such a slot orientation. Figure 1 of the patent as originally filed showed an example of an anode which did not drain the CO₂ towards the centre channel.

The auxiliary requests further restricted the slot width and thus restricted the subject-matter to what was actually tested by the patentee.

- VIII. The appellant (opponent) requested that the decision under appeal be set aside and that the European patent be revoked.

- IX. The respondent (patent proprietor) requested that the appeal be dismissed and that the patent be maintained as granted or, in the alternative, that the patent be maintained in amended form based on one of the two auxiliary requests submitted on 16 July 2019 with the reply to the grounds of appeal.

Reasons for the Decision

1. Article 100(c) EPC, added subject-matter
- 1.1 It is undisputed that the feature "... and extends from end to end ..." has its basis only in Figure 1 of the patent as originally filed. The passage of the description relating to "... at one end of the anode ... at the other end ..." on page 3 as filed also refers to this figure.

The question to assess is whether the feature at issue has an inextricable functional link with the remaining features of Figure 1.

- 1.2 According to the respondent's argument, the skilled person would understand that the slots had to be parallel to the longer side of the cuboid anode since slots in the direction along the shorter side of the cuboid would result in an anode which did not work properly in an Hall-Héroult process because they drained the CO₂ towards the centre channel.
- 1.3 The board cannot accept this line of argument.

Claim 1 does not specify the shape of the anode. It is therefore not limited to cuboid anodes.

However, even when assuming that the skilled person had only considered cuboid shapes, as argued by the respondent, the shorter side of the cuboid would not necessarily be considered the "end".

Even when further hypothesising that the anode had an elongated cuboid shape such that the longer side was significantly longer than the shorter side and that the shorter side was considered an "end", the skilled

person would not necessarily be limited to the embodiment disclosed in Figure 1.

Indeed, the wording of claim 1 still encompasses the possibility of diagonal slots. Diagonal slots make technical sense, as explained by the appellant and disclosed in D3 on page 250, right-hand column, third paragraph. Such an embodiment with diagonal slots is, however, not derivable from Figure 1 as filed.

The respondent argued that the draining of CO₂ towards a centre channel is to be avoided. This requirement is not reflected by the features of the claim since embodiments not showing this alleged requirement are also encompassed. It was emphasised by the respondent that the anodes to be used have a specific geometry and are adapted to the corresponding cells and cannot therefore be exchanged with any other anode. This even more supports the view that Figure 1 discloses an embodiment which cannot be easily generalised.

- 1.4 Therefore, the disputed feature was taken in isolation from the arrangement shown in Figure 1 and represents an intermediate generalisation, even though it is inextricably linked to the other features shown in Figure 1.

Claim 1 consequently does not meet the requirements of Article 123(2) EPC.

- 1.5 For the same reasons, claims 1 of auxiliary requests 1 and 2 do not overcome this deficiency because they are merely directed to a restriction of the slot width.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



C. Vodz

E. Bendl

Decision electronically authenticated