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**Datasheet for the decision
of 1 October 2024**

Case Number: T 1780/22 - 3.3.05

Application Number: 18208740.3

Publication Number: 3477729

IPC: H01M10/0525, H01M10/0587,
H01M50/171, H01M50/538,
H01M50/469, H01M50/534,
H01M50/109

Language of the proceedings: EN

Title of invention:
RECHARGEABLE LITHIUM ION BUTTON CELL BATTERY

Patent Proprietor:
Zhuhai Zhi Li Battery Co., Ltd.

Opponent:
VARTA Microbattery GmbH

Headword:
Cell battery/Zhuhai Zhi

Relevant legal provisions:
EPC Art. 123(2), 83, 56
RPBA 2020 Art. 12(3)

Keyword:

Amendments - allowable (no) - main request, auxiliary requests
1 to 3

Statement of grounds of appeal - reasons set out clearly and
concisely (no)

Auxiliary request 4 - allowable (yes)

Decisions cited:

T 2117/18

Catchword:



Beschwerdekammern
Boards of Appeal
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Case Number: T 1780/22 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 1 October 2024

Appellant: VARTA Microbattery GmbH
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Respondent: Zhuhai Zhi Li Battery Co., Ltd.
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
24 June 2022 concerning maintenance of the
European Patent No. 3477729 in amended form.**

Composition of the Board:

Chair E. Bendl
Members: G. Glod
R. Winkelhofer

Summary of Facts and Submissions

- I. The opponent's (appellant's) appeal is against the opposition division's decision finding that European patent No. 3 477 729 B1 as amended on the basis of the then auxiliary request 1 met the requirements of the EPC.

Claim 1 of said request (now the main request) is as follows:

"1. A rechargeable lithium ion button cell comprising: a sealed housing comprising an inner casing (1) and an outer casing (3), each of both casings having at least one flat area (1a, 3a) as top or bottom of the button cell, and a round or oval sidewall (1c, 3b) vertically formed to the flat areas, said sealed housing also comprising a round or oval insulation gasket (2) having a footing rim and positioning between said sidewalls, said footing rim covering an opening end of said inner casing sidewall; wherein said outer casing sidewall is crimped together with the gasket against the inner casing to seal the button cell; a first electrode (4) and a second electrode (5) inside said sealed housing being spiral wound with a separator (6) to be a round or oval roll having a roll axis vertical to said flat areas of the casings, each of said electrodes having one conductor tab (7, 13) to connect the electrodes with said casings, respectively; wherein said sealed housing also contains an electrolyte; characterized in that a first O-ring shaped insulation washer (11a) is attached to and covers the inner flat area of the outer casing (3a), wherein a hole of the O-ring is left blank

for the first electrode (4) conductor tab (7) to be further connected to said outer casing (3a), and a further insulation washer (11) is applied to fully cover the conductor tab (7) and the outer casing (3a) preventing them from exposure to the electrolyte."

II. With the reply to the appeal, the respondent (patent proprietor) submitted nine auxiliary requests.

Compared with the main request, claim 1 of auxiliary request 1 includes the following feature at the end of the claim.

"; said first electrode conductor tab is covered with insulation tapes (7a, 7b) at its non-coated and non-connecting areas to the extent that no metal of the first electrode is exposed to the electrolyte; said second electrode conductor tab is covered with insulation tapes (13a, 13b) at its non-coated and non-welding areas to the extent that no metal of the second electrode is exposed to the electrolyte."

Compared with auxiliary request 1, claim 1 of auxiliary request 2 further includes the following feature at the end of the claim.

"; and said first conductor (7) is welded to a metal flake (10), and said metal flake (10) is pressed by said gasket (2) upon said outer casing bottom."

Compared with auxiliary request 2, claim 1 of auxiliary request 3 includes the following amendment (underlined).

"1. ...characterized in that a first O-ring shaped insulation washer (11a) is attached to and covers the inner flat area of the outer casing (3a), wherein a hole at a center of the O-ring is left blank for the first electrode (4) conductor tab (7)..."

Compared with the main request, claim 1 of auxiliary request 4 includes the following amendment (underlined).

"1. ...characterized in that a first O-ring shaped insulation washer (11a) is attached to and covers the inner flat area of the outer casing (3a), wherein a hole of the O-ring is left blank for the first electrode (4) conductor tab (7) to be further connected to said outer casing (3a), and a round or oval further insulation washer (11) is applied to fully cover the conductor tab (7) and the outer casing (3a) preventing them from exposure to the electrolyte."

Claims 2 to 6 of auxiliary request 4 refer to preferred embodiments of claim 1.

III. In response to the communication pursuant to Article 15(1) RPBA, the parties withdrew their requests for oral proceedings. Consequently, the decision can be rendered in writing in accordance with Article 12(8) RPBA.

IV. The appellant's arguments, as far as relevant to the present decision, can be summarised as follows.

The requirements of Article 123(2) EPC were not met. The feature "oval or round" was missing in claim 1. In addition, the specification of the material of the insulation washer was missing.

The requirements of Article 83 EPC were also not met. Claim 1 included embodiments which could not be carried out.

The objections under Article 56 EPC made during opposition proceedings still applied.

- V. The respondent's arguments, as far as relevant to the present decision, can be summarised as follows.

The appeal was inadmissible. None of the opposition division's conclusions was properly challenged by the appellant.

- VI. The appellant requests that the decision under appeal be set aside and amended in such a way that the patent is revoked.

The respondent requests that the appeal be rejected as inadmissible or, in the alternative, that the appeal be dismissed or, in the further alternative, that the patent be maintained in amended form on the basis of one of auxiliary requests 1 to 9, submitted with the reply to the appeal.

Reasons for the Decision

1. Rule 99(2) EPC - Admissibility of the appeal

The respondent argues that the appeal was not substantiated and was therefore inadmissible (Article 108 and Rule 101(1) EPC).

However, under point III of its statement of grounds of appeal, the appellant explains why, in its view, the opposition division's decision regarding Article 123(2) EPC was wrong. In addition, under point IV the appellant discusses sufficiency of disclosure with respect to the impugned decision.

This is in line with the requirements of Rule 99(2) EPC.

Since there is no partial admissibility (Case Law of the Boards of Appeal, 10th edition, 2022, V.A.2.6.8), the appeal is admissible (Rule 101(1) and Article 99(2) EPC).

Main request (as found allowable by the opposition division)

2. Article 123(2) EPC

Claim 1 of the main request is as follows (amendments with respect to claim 1 as filed are underlined / struck through; see also point 14 of the Summary of facts and submissions of the impugned decision).

1. A rechargeable lithium ion button cell comprising:
(1.1) a sealed housing comprising an inner casing (1) and an outer casing (3), each of both casings having at least one flat area (1a, 3a) as top or bottom of the button cell, and a round or oval sidewall (1c, 3b) vertically formed to the flat areas,
(1.2) said sealed housing also comprising a round or oval insulation gasket (2) having a footing rim positioned between said sidewalls, said footing rim covering an opening end of said inner casing sidewall; wherein said outer casing sidewall is crimped together

with the gasket against the inner casing to seal the button cell;

(1.3) a first electrode (4) and a second electrode (5) inside said sealed housing being spiral wound with a separator (6) to be a round or oval roll having a roll axis vertical to said flat areas of the casings, each of said electrodes having one conductor tab (7, 13) to connect the electrodes with said casings, respectively;

(1.4) wherein said sealed housing also contains an electrolyte;

characterized in that

(1.5) a first O-ring shaped insulation washer (11a) is attached to and covers ~~and covering~~ the inner flat area of the outer casing (3a), wherein ~~the~~ a hole of the O-ring is left blank for the first electrode (4) conductor tab (7) to be further connected to said outer casing (3a), and

(1.6) a further insulation washer (11) is applied to fully cover the conductor tab (7) and the outer casing (3a) preventing them from exposure to the electrolyte.

Feature 1.6 is based on page 9, lines 16 to 18, of the application as originally filed. This passage is the only passage in the application as filed that directly links the wording "another insulation washer 11" with preventing the exposure of the tab metal and the casing metal to the electrolyte. Said passage unambiguously discloses that the insulation washer is round or oval. A disclosure of a different shape is not present in the application as originally filed. The use in examples 2 and 3 of the wording "usually round" does not alter this understanding. In the specific set-up of the examples, the insulation washer 11 is usually round, while in other set-ups it can be oval instead, as disclosed on page 9, line 17, or on page 8, line 29.

It is to be noted that the further arguments of the appellant concerning Article 123(2) EPC are not convincing. Feature 1.6 (with the round or oval insulation washer) is directly and unambiguously derivable from the passage cited above (page 9, lines 16 to 18). There is no disclosure of the type of material to be used. The skilled person understands that the benefit with respect to the electrolyte exposure is due to the full coverage.

However, as feature 1.6 is not restricted to a round or oval insulation washer, as outlined above, the requirements of Article 123(2) EPC are not met.

The main request must thus fail.

Auxiliary requests 1 to 3

3. Article 123(2) EPC

These requests do not include the specification "round or oval" in feature 1.6 either. Consequently the same deficit as for the main request applies.

Auxiliary requests 1 to 3 are thus not allowable either.

Auxiliary request 4

4. Article 123(2) EPC

This request includes the restriction in feature 1.6 that the further insulation washer (11) is round or oval. In view of the comments made for the main request, the requirements of Article 123(2) EPC are met.

5. Article 83 EPC

The appellant argues, in this context, that the requirements of Article 83 EPC were not fulfilled. The insulation washer alone could not prevent the exposure of the conductor tab and the outer casing to electrolyte.

This argument is not convincing. Indeed, the skilled person reading claim 1 would understand that the wording "to fully cover the conductor tab (7) and the outer casing (3a)" has to be read in combination with feature 1.5, meaning that the coverage relates only to the hole. The skilled person would know how to cover the rest of the conductor tab - i.e. namely the part not covered by the insulation washer (11) - to avoid contact with the electrolyte. One specific example is given in claim 3.

As a consequence, the requirements of Article 83 EPC are met.

6. Article 56 EPC

In their statement of grounds of appeal, the appellant only refers to their written submission made during opposition proceedings in advance of the oral proceedings and thus in advance of the opposition division's decision.

According to Article 12(3) RPBA, the grounds of appeal are to set out clearly and concisely the reasons why it is requested that the decision under appeal be

reversed. This requirement is not met in the present case, since the grounds of appeal do not deal with the impugned decision on the question of inventive step. In addition, general references to submissions made in opposition proceedings are not to be taken into account, this being due to a lack of substantiation (see also T 2117/18, Reasons 2.2 and Case Law of the Boards of Appeal of the EPO, 10th edition, 2022, V.A. 4.3.5 and V.A.2.6.5). Therefore, in the case at hand, the submissions with respect to inventive step cannot be considered (Article 12(5) RPBA).

Rule 103(4)(c) EPC

The request for oral proceedings was withdrawn within one month of notification of the communication pursuant to Article 15(1) RPBA and no oral proceedings took place. The appeal fee is thus reimbursed at 25%.

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 in amended form on the basis of claims 1 to 6 of auxiliary request 4, submitted with the reply to the appeal, and a description to be adapted thereto, if necessary.

The Registrar:

The Chair:



C. Vodz

E. Bendl

Decision electronically authenticated