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**Datasheet for the decision  
of 30 January 2025**

**Case Number:** T 0225/23 - 3.3.05

**Application Number:** 11186366.8

**Publication Number:** 2448057

**IPC:** H01M10/48, H01M10/42

**Language of the proceedings:** EN

**Title of invention:**  
RECHARGEABLE BATTERY PACK

**Patent Proprietor:**  
Makita Corporation

**Opponent:**  
Marks & Clerk LLP

**Headword:**  
Battery pack/MAKITA

**Relevant legal provisions:**  
EPC Art. 56, 83, 84

**Keyword:**  
Claims - clarity - main request (yes)  
Sufficiency of disclosure - (yes)  
Inventive step - main request (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

Boards of Appeal of the  
European Patent Office  
Richard-Reitzner-Allee 8  
85540 Haar  
GERMANY  
Tel. +49 (0)89 2399-0

Case Number: T 0225/23 - 3.3.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.05**  
**of 30 January 2025**

**Appellant:** Makita Corporation  
(Patent Proprietor) 3-11-8, Sumiyoshi-cho  
Anjo, Aichi 446-8502 (JP)

**Representative:** Kramer Barske Schmidtchen  
Patentanwälte PartG mbB  
European Patent Attorneys  
Landsberger Strasse 300  
80687 München (DE)

**Respondent:** Marks & Clerk LLP  
(Opponent) 15 Fetter Lane  
London  
EC4A 1BW (GB)

**Representative:** Zimmermann & Partner  
Patentanwälte mbB  
Postfach 330 920  
80069 München (DE)

**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
24 November 2022 concerning maintenance of the  
European Patent No. 2448057 in amended form.**

**Composition of the Board:**

**Chair** E. Bendl  
**Members:** T. Burkhardt  
R. Winkelhofer

## Summary of Facts and Submissions

I. The patent proprietor's (appellant's) appeal is against the opposition division's decision to maintain European patent No. 2 448 057 B1 as amended on the basis of the third auxiliary request at that time.

II. Of the documents discussed at the opposition stage, the following are relevant to the present decision:

D1 STIHL HSA 65, 85, instruction manual, 2009

D5 WO 2009/102082 A2

D6 JP 2010-228040 A

D6a English translation of D6

D8 US 7,508,171 B2

D32 EP 1 710 853 A1

III. Independent claim 1 of the main request, in the final version before the board, reads as follows:

"1. A rechargeable battery pack (40) attachable to a power tool, the rechargeable battery pack comprising:

a display element (81,82,83,84) provided in such a manner that a lighted state thereof can be confirmed from outside;

a remaining capacity detection device (70) that is configured to detect a remaining capacity of a rechargeable battery (50);

a remaining capacity display control device (70) that is configured to display the remaining capacity detected by the remaining capacity detection device (70) by controlling the lighted state of the display element (81,82,83,84);

an abnormality detection device (70) that is configured to detect an abnormality of the rechargeable battery (50); and

an abnormality display control device (70) that is configured to display the abnormality of the rechargeable battery (50) detected by the abnormality detection device (70) by controlling the lighted state of the display element (81,82,83,84) to an abnormality display state, which is different from a remaining capacity display state controlled by the remaining capacity display control device (70),

wherein the abnormality detection device (70) is configured to detect each of a plurality of kinds of abnormalities occurring in the rechargeable battery (50),

wherein the abnormality display control device (70) is configured to display the abnormality of the rechargeable battery (50) in such a manner that a content of the abnormality can be identified by setting a lighting pattern of the display element (81,82,83,84) in accordance with the content of the abnormality detected by the abnormality detection device (70),

wherein the abnormality display control device (70) is configured to set the lighting pattern of the display element (81,82,83,84) in such a manner that it can be identified whether or not the content of the abnormality detected by the abnormality detection device (70) is a kind in which an abnormal state can be promptly restored to a normal state, when the battery pack (40) is attached to a power tool, by an operation of the power tool by the user, and

wherein the abnormal state that can be restored to the normal state is a state, in which a lock current, that flows when a drive motor (M1) of the power tool is locked, is detected."

Dependent claims 2 to 8 refer to specific embodiments.

- IV. The arguments put forward by the opponent (respondent) during the appeal proceedings which are relevant to the present decision can be summarised as follows:

The amendment in claim 1 gave rise to a lack of clarity.

The invention was not sufficiently disclosed.

The subject-matter of claim 1 lacked inventive step in view of D1 in combination with each of D5, D6, D8 and D32.

- V. The appellant's arguments at the appeal stage which are relevant to the present decision are reflected in the reasons below.

- VI. Requests

The appellant requests that the decision under appeal be set aside and amended such that the patent is maintained on the basis of the main request, submitted as auxiliary request II with the grounds of appeal. In the alternative, the appellant requests that the patent be maintained on the basis of one of auxiliary requests III to V, V-A, VI, VI-A, VII and VII-A, also submitted with the grounds of appeal.

The respondent requests that the appeal be dismissed.

## Reasons for the Decision

### *Main request*

Claim 1 has been limited vis-à-vis claim 1 as granted in that the abnormal state that can be restored to the normal state is a state, in which a "lock current" is detected, which occurs when the motor is locked.

#### 1. Clarity

The respondent argued that the feature "wherein the abnormal state that can be restored to the normal state is a state, in which a lock current, that flows when a drive motor (M1) of the power tool is locked, is detected" inserted into claim 1 was unclear. It was impossible to determine such a state from the magnitude of the current alone. Further information was needed (such as information about the rotation speed of the tool) to distinguish such a state from a state of, e.g., overload, as shown by **D32**, for example. However, this further information related to the power tool, not the battery pack. Moreover, the magnitude of lock current significantly depended on the type of power tool used.

This is not convincing. In the case in hand, this feature is clear in the given context as it requires that the claimed battery pack be configured to react to certain specific conditions of the power tool (being in locked state) when connected to the battery pack.

The skilled person understands the term "locked state", even in the context of power tools other than driver drills, and also understands that the magnitude of the lock current depends on the type of power tool used. No proof to the contrary has been provided by the respondent.

In the case in hand, the skilled person thus has no difficulty in inferring the resultant restriction of the scope of protection for the first entity, i.e. for the battery pack.

Therefore, the amendment does not give rise to a lack of clarity (Article 84 EPC).

## 2. Sufficiency of disclosure

The respondent argued that, as regards the battery pack, the skilled person could not distinguish the "lock current" abnormality from, e.g., the "overload" abnormality, since in both cases the discharge current became too high.

This is not convincing either. The implementation of further communication channels between the power tool and the battery pack (e.g. for detecting a locked state of the motor) for distinguishing between the two abnormalities forms part of the common general knowledge of the skilled person.

The invention is hence sufficiently disclosed (Article 83 EPC).

3. Inventive step

The respondent raises inventive-step objections starting from **D1** in combination with each of **D5**, **D6**, **D8** and **D32**.

However, for the reasons set out below, the main request meets the requirements of Article 56 EPC.

3.1 The invention relates to a battery pack.

3.2 Document **D1** discloses a rechargeable battery pack attachable to a power tool, namely to a hedge trimmer (e.g. the figure in the right-hand column of page 40). The power tool has a trigger switch/switch lever.

Moreover, page 39 of D1 discloses that the battery pack comprises a display element, a remaining capacity display control device (left-hand column; green light-emitting diodes) and an abnormality display control device (middle column and right-hand column; red light-emitting diodes). The abnormalities "Battery faulty" and "Battery is too hot/cold" are disclosed.

If the battery pack becomes too hot, it has to be cooled down while the battery possibly remains attached (middle and right-hand columns of page 39).

The appellant disputes the view that cooling down can be considered:

- (i) an abnormal state that is "*promptly* restored" to the normal state
- (ii) an "*operation* of the power tool by the user"

As regards (i), the appellant argues that the term "promptly" was to be interpreted more restrictively as the description of the patent in suit (see paragraphs [0093], [0101] and [0102]) made it clear that an abnormal state with an excessively high temperature of the battery pack could not be promptly restored to the normal state.

This view cannot be shared. In the absence of further specification of the term "promptly" in claim 1, this term has to be construed in a broad manner. There is no reason why a small excess in temperature, for example, cannot be considered an abnormal state that can be promptly restored to normal.

As regards (ii), it has not been disputed that the user of the power tool of D1 necessarily releases the trigger switch/switch lever if the battery pack becomes too hot and has to cool down (page 39). However, releasing the trigger switch/switch lever is an operation of the power tool by the user.

Consequently, neither (i) nor (ii) is a distinguishing feature having regard to D1.

On the other hand, D1 fails to disclose the feature that the abnormal state is a state that can be restored to normal, in which a "lock current" is detected, as acknowledged by the respondent.

In addition, D1 does not directly and unambiguously disclose that the abnormality detection device is included in the battery pack, as required by claim 1.

Indeed, this detection device could also be located in the power tool.

It is not stated anywhere in D1 and nor is it deducible from anywhere in D1 that the battery pack is capable of displaying abnormalities even if it is neither attached to the power tool nor connected to the charger. It is hence not proven that the abnormality detection device is located in the battery pack.

The fact that no power tool or charger is shown in the schematic figure of the middle column of page 38 does not constitute proof. Other passages indicated by the respondent, such as the passage "Storing the battery" in the right-hand column of page 41, refer instead to the display of the remaining capacity of the battery, not to the display of abnormalities. The right-hand column of page 38 and the left-hand and middle columns of page 40 refer to a situation where the battery pack is placed on a charger. The fact that in this case, the power tool and the battery pack of D1 communicate with each other (right-hand column of page 35) cannot be regarded as proof that the abnormality detection device is located in the battery pack either.

Similarly, it is not stated that button (1) (middle column of page 38 of D1) works even if the battery has not been inserted into the power tool or the charger.

- 3.3 As D1 relates to the same technical field as the invention and as it has numerous features in common with the subject-matter of claim 1, it is a suitable starting point for assessing inventive step.
- 3.4 According to the respondent, the objective technical problem to be solved is the provision of a battery pack that indicates to the user that the tool has become

jammed so that they can safely and intuitively implement an appropriate remedy.

For the reasons set out below, the claimed solution is not obvious, even if the respondent's formulation of the problem is retained.

- 3.5 It is proposed that this problem be solved by the battery pack of claim 1 being characterised at least by a lock-current-detection device located in the rechargeable battery pack, the lock current being a current that flows when a drive motor of the power tool is locked.
- 3.6 The technical problem posed has been successfully solved.
- 3.7 For the reasons set out below, the solution is not obvious.
- 3.7.1 D1 itself only teaches that the power tool has to be switched off and the battery pack removed if jamming occurs.
- 3.7.2 A combination of D1 with **D5** or **D6** does not result in the claimed subject-matter without the benefit of hindsight. These documents deal with methods for the detection of a "locked state" in power tools with battery packs (D5: Figures 1 and 3 as well as paragraphs [0001], [0005], [0051] and [0052]; D6: paragraph [0001]).

The detection and display control devices of D5 and D6 are located in the power tool, not in the battery pack as required by claim 1 (D5: Figure 1 (reference numerals 4 and 25) and paragraphs [0038] and [0051];

D6: Figure 1 ("power tool 1", "control unit 5", "notification unit 8" and "battery pack 9")).

Integrating these detection and display control devices into the battery pack would require an additional step and there are no incentives in this regard. In fact, these documents are silent on the incentives claimed by the respondent, i.e. reducing the number of components, costs and complexity as well as increasing intuition and achieving a more centralised approach.

- 3.7.3 The combination of D1 with D8 or D32 does not lead to the invention without the application of hindsight either.

**D32** fails to disclose that the presence of a lock current is displayed. Only an excessively high temperature is signalled by "display 90" (paragraph [0045], Figure 3).

As regards **D8**, while the passage in column 2, lines 50 to 57 discloses, in the section headed "Background of the invention", that a motor stall could result in higher currents, which in turn could damage the tool's motor, the passage in column 3, lines 2 to 22, which relates to the problems related to the prior art and to the "summary of the invention", only mentions protection against a situation of "over-current" in general, not specifically to an over-current corresponding to a situation where the power tool is locked.

Moreover, D8 mentions, under the heading "Audible/ Visual Warning Mechanisms" (column 15, line 40), only the specific scenarios "under-voltage or over temperature threshold" (column 15, lines 50 to 54), not

an "over-current" related to a motor stall. The term "warning mechanisms" in column 16, lines 45 to 51 makes it clear that this passage refers to the section starting in column 15, line 40, since the header uses the same term.

Consequently, D8 does not disclose (i) a detection device for the lock-current abnormality, the lock current being a current that flows when a drive motor of the power tool is locked, and nor does it disclose (ii) the display of such an abnormality.

3.8 For the same reasons, the subject-matter of dependent claims 2 to 8 also involves an inventive step. (Article 56 EPC).

## 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 on the basis of the main request, submitted as auxiliary request II with the grounds of appeal, and the description to be adapted.

The Registrar:

The Chair:



C. Vodz

E. Bendl

Decision electronically authenticated