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Datasheet for the decision of 24 April 2012

Case Number: T 0733/08 - 3.5.02

Application Number: 04254838.8

Publication Number: 1626477

IPC: H02J 7/34, H02J 7/00

Language of the proceedings: EN

Title of invention:
Charging device with bi-directional power flow to an integrated battery unit

Applicant:
Yang, Tai-Her

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0733/08 - 3.5.02

D E C I S I O N
of the Technical Board of Appeal 3.5.02
of 24 April 2012

Appellant: (Applicant)
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 23 November 2007 refusing European patent application No. 04254838.8 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: M. Ruggiu
Members: M. Léouffre
P. Mühlens

Summary of Facts and Submissions

I. This is an appeal of the applicant against the decision of the examining division to refuse the European patent application No. 04254838.8

II. The reason given for the refusal was essentially that the subject-matter of claims 1 to 5 then on file did not involve an inventive step in the sense of Article 56 EPC having regard to document D6 = US 6 473 630 B1.

III. With the Statement setting out the Grounds of Appeal, the appellant filed a new set of claims and argued that the invention concerned a unitary charging device while the device of D6 was "basically composed of three pieces".

IV. In a communication dated 15 December 2011 summoning the appellant to oral proceedings, the Board drew the attention of the applicant to the fact that there was no basis in the application as filed for a "unitary" charging device and indicated its preliminary opinion that the subject-matter of claims 1, 2 and 5 did not appear to involve an inventive step having regard to document D6.

V. The appellant rescinded a previous request for oral proceedings and requested in writing that the decision under appeal be set aside and that a patent be granted on the basis of the main request or on the basis of one of the first and second auxiliary requests, all filed with letter dated 23 March 2012.

VI. Oral proceedings before the board took place on 24 April 2012 in the absence of the appellant.

VII. Claim 1 of the main request reads as follows:

"A multi-purpose, charging device connectable to an external charging source (101), the charging device allowing two-way input and output, the charging device comprising:
a control circuit (102);
a first battery holder (103) housing a first battery;
a second battery holder (104) housing a second battery;
at least one plug-and-socket unit (105) to externally output a charging potential;
a casing; and
an indicator;
characterised in that the control circuit is such that:

a) the control circuit controls charging of the first battery when the charging source is electrically connected to the first battery via the control circuit;

b) the control circuit controls charging of the second battery when the charging source is electrically connected to the second battery via the control circuit;

c) the control circuit controls the at least one plug-and-socket unit to output a charging potential when the charging source is electrically connected to the at least one plug-and-socket unit via the control circuit; and

d) the control circuit controls the at least one plug-and-socket unit to output a charging potential when the first battery is electrically connected to the at least one plug-an-socket unit via the control circuit."

Claim 2 reads as follows:

"A charging device as claimed in claim 1, wherein the control circuit is such that the control circuit controls charging of the second battery when the first battery is electrically connected to the second battery via the control circuit"

Claim 3 reads as follows:

"A charging device as claimed in claim 1 or claim 2, wherein the charging source (101) is a DC power source rectified from AC power supply."

Claim 4 reads as follows:

"A charging device as claimed in claim 1 or claim 2, wherein the charging source (101) is a DC source."

Claim 5 reads as follows:

"A charging device as claimed in any one of claims 1 to 4, wherein the control circuit (102) inputs the charging potentials that are supplied by the charging source (101) to the first batteries, to the second battery or through the at least one plug-and-socket unit (105), or to control the first battery to execute emergency charging to the second battery, or to a battery coupled to the plug-and-socket unit."

VIII. Claim 1 of the first auxiliary request corresponds to claim 2 of the main request.

IX. Claim 1 of the second auxiliary request corresponds to claim 5 of the main request as dependent on claim 2.

X. The appellant essentially argued as follows:

Document D6 comprised two separate embodiments which were relevant to the present invention and which might only be combined for the purpose of inventive step. Claim 1 required four different modes of operation a) to d) and was actually novel over each of the two embodiments disclosed respectively in figure 2 and figure 4 of D6, because none of these embodiments disclosed the modes of operation defined under c) and d).

Actually figure 2 disclosed a first battery (204) and a second battery (205) and provided the modes of operation a) and b). However, while figure 4 disclosed a feature equivalent to the plug-and-socket unit, figure 2 did not.

The combination of these embodiments wouldn't render the subject-matter of claim 1 obvious. In the embodiment related to figure 4 there was no need to provide the modes of operation c) or d). With this embodiment, there was no disclosure of outputting charge from the plug-and-socket unit. When the battery 205A was depleted, it might have to be exchanged for battery 205B. Accordingly, while battery 205A was being used to power the headset, there was no need for it to

be charged. The batteries 205 were only charged when plugged into holder 400B. In view of this, there was no need for the skilled person to look at the teachings of the embodiment of Figure 2. Therefore the combination of the embodiments disclosed in figures 2 and 4 would have not led to a charging device provided with the modes of operation c) and d).

Reasons for the Decision

1. The appeal is admissible.

2. *Inventive step (Article 56 EPC)*: main and auxiliary requests

Document D6 discloses a specialised personal electronic equipment. This equipment comprises a wireless phone 107 together with its AC adapter 210 and its headset 101 as shown in figures 1 to 4.

The wireless phone 107 acts as a charging device connectable to an external charging source (cf. column 4, lines 1 to 4). The charging device comprises:

– a casing and an indicator 111 (cf. column 2, line 59);

– a first battery holder (implicit in wireless phones) housing the first battery 204, and

– a control circuit, in particular including connections that control the provision of charging current to the first battery 204.

The charging device i.e. the wireless phone 107 does not comprise the second battery 205 which is inserted in the headset 101, but a plug-and-socket unit 103, 108 which externally outputs a charging potential for charging the battery of the headset (cf. column 3, lines 55 to 60 which is part of the description common to both embodiments of D6).

2.1 According to the first embodiment shown in figure 2 of D6 the control circuit

– controls charging of the first battery when the charging source is electrically connected to the first battery via the control circuit (cf. column 3, line 65 to column 4, line 1) and

– controls the port 108 of the plug-and-socket unit 103, 108 to output a charging potential when either of the charging source 201 or the first battery 204 is electrically connected to the plug-and-socket unit 108, 103 via the control circuit (cf. column 4, lines 7 to 12).

2.2 The subject-matter of claim 1 of all requests can therefore be considered as differing from the first embodiment of D6 in that

– the charging device i.e. the wireless phone comprises a second battery holder housing a second battery; and in that

– the control circuit controls charging of the second battery when the charging source is electrically connected to the second battery via the control circuit.

2.3 The second embodiment of D6 discloses the first feature mentioned above (cf. column 4, lines 46 to 51), namely a wireless phone comprising a second battery holder 400B housing a second battery 205B.

Document D6 does not mention explicitly that the control circuit of figure 4 controls charging of the second battery 205B when the charging source is electrically connected to the second battery via the control circuit.

However figure 4 shows unambiguously that the second battery 205B is supplied over an "upconverter and charger" 203A identical to the "upconverter and charger" 203 belonging to the headset and shown in figure 2. Alike the "upconverter and charger" 203, according to figure 4, the "upconverter and charger" 203A is connected to the first battery 204 and to the external charger 201. Thus applying the teaching of the first embodiment (figure 2) when attempting to solve the problem of extending "the length of time the headset (101) can be used without being connected to the wireless phone (107)" (cf. D6, column 4, lines 28 to 32), the person skilled in the art would connect the second battery 205B of figure 4 and its "upconverter and charger" 203A to the control circuit of the first embodiment (figure 2) in a way to provide the same charging possibilities as for the battery 205 of the

headset. He would thereby arrive in an obvious manner at the subject-matter of claim 1 of the main and first auxiliary requests wherein the control circuit controls charging of the second battery 205B when the charging source 201 is electrically connected to the second battery via the control circuit (main request) or when the first battery 204 is electrically connected to the second battery 205B via the control circuit (cf. column 4, lines 7 to 12) (first auxiliary request).

2.4 In emergency situations, namely when both batteries 205, 205B are depleted and when the external charging source 201 is not available, the control circuit would control the first battery 204 to recharge batteries 205 and/or 205B (cf. column 4, lines 10 to 12 and 52 to 56). Thus the last feature of claim 1 of the second auxiliary request appears to be obvious too.

2.5 The subject-matter of claim 1 of the main request could also be considered as lacking an inventive step having regard to the sole embodiment of figure 4 for the following reasons.

Despite the fact that no passage related to the second embodiment of D6 discloses feature a), this feature is implicit in a wireless phone.

Figure 4 discloses a second battery 205B as emergency battery which may be recharged from the first battery 204 (cf. column 4, line 56). This mode of operation allows charging the second battery remotely from the external source. But a person skilled in the art would not exercise any inventive activity in providing the possibility to charge this second battery 205B directly

from the external charging source if available (feature b)).

The headset shown in figure 4 comprises an "upconverter and charger" 203B connected to the external charger 201 over the wireless phone. Consequently, it appears to be obvious to a person skilled in the art that a corresponding connector is necessary and that since the headset of D6 communicates wirelessly with the wireless phone (charging unit) (cf. D6, column 3, lines 28 to 38) the charging current is to be supplied over the said connector. The charging current would then be supplied either from the first battery (feature d)) or from the external charging source if available (feature c)).

The appellant argues that "When the battery 205A is depleted, it may be exchanged for battery 205B. Accordingly, while battery 205A is being used to power the headset, there would be no need for it to be charged. Accordingly, there would be no need to provide the mode of operation c) or d). Instead, the batteries 205 are only charged when plugged into holder 400B. In view of this, there would be no need for the skilled person to look at the teachings of the embodiment of Figure 2."

The Board cannot follow this argument. It may not be possible to charge the battery when the headset is in use but it is at least possible to charge the battery when it is placed in the holder 400A and the headset is connected to the wireless phone. An obvious reason may be to ensure a long operation of the phone when the charger 201 cannot be used. The user would have then a

need for two batteries fully charged and, in order to save time, both would be charged simultaneously.

In view of the above, the subject-matter of claim 1 of the main, first and second auxiliary requests does not involve an inventive step as required by Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

U. Bultmann M. Ruggiu