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Datasheet for the decision of 10 January 2019

Case Number: T 0526/16 - 3.2.01

Application Number: 07123987.5

Publication Number: 2072455

IPC: B66F9/075, B62B3/06, H02J7/00

Language of the proceedings: EN

Title of invention:
Industrial truck

Patent Proprietor:
BT Products AB

Opponent:
Jungheinrich Aktiengesellschaft

Headword:

Relevant legal provisions:
EPC Art. 56
RPBA Art. 13(1)

Keyword:
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Late-filed request - admitted (yes) - auxiliary request 9

Decisions cited:

Catchword:

Europäisches Patentamt
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Beschwerdekammern

Boards of Appeal

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Case Number: T 0526/16 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 10 January 2019

Appellant: (Opponent)	Jungheinrich Aktiengesellschaft Friedrich-Ebert-Damm 129 22047 Hamburg (DE)
Representative:	Hauck Patentanwaltspartnerschaft mbB Postfach 11 31 53 20431 Hamburg (DE)
Respondent: (Patent Proprietor)	BT Products AB 595 81 Mjölby (SE)
Representative:	Zacco Sweden AB P.O. Box 5581 114 85 Stockholm (SE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 7 January 2016 rejecting the opposition filed against European patent No. 2072455 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	G. Pricolo
Members:	H. Geuss
	O. Loizou

Summary of Facts and Submissions

I. The appeal is directed against the decision of the Opposition Division of the European Patent Office posted on 7 January 2016 rejecting the opposition filed against European patent No. 2072455 pursuant to Article 101(2) EPC.

II. The opposition division held, inter alia, that the subject-matter of claim 1 as granted was based on inventive step, starting from document

E3 US 2004/0100225 A1.

Furthermore, the opposition division admitted the following documents into the proceedings:

E10: DE 197 56 744 A1
E11: DE 103 30 817 A1

III. Oral proceedings before the Board were held on 10 January 2019.

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

The respondent (patent proprietor) requested that the appeal be dismissed (main request), or in the alternative, that the decision be set aside and the patent be maintained in amended form on the basis of the set of claims of one of the 6th auxiliary request filed with letter dated 21 November 2018, 7th auxiliary request filed during oral proceedings, 9th, 10th and 11th auxiliary requests filed with letter dated

21 November 2018.

IV. Claim 1 as granted (main request) reads as follows:

Industrial truck comprising a battery (4), an onboard battery charger (5), a truck computer (6) and a CAN network (8) to which the truck computer (6) is connected, characterised in that the battery charger (5) is connected to the CAN network (8), wherein the battery charger (5) comprises a charge detecting means (9) for detecting a battery charging process, and, if such process is detected, is adapted to send an immobilising signal to the truck computer (6).

In the following reference will be made to the features of claim 1 using the numbering in accordance with the contested decision (see page 3), i.e.:

M1 Industrial truck comprising
M2 a battery
M3 a battery charger
M4 the battery charger is an onboard battery charger
M5 a truck computer and
M6 a CAN network to which the truck computer is connected
M7 the battery charger is connected to the CAN network
M8 the battery charger comprises a charge detecting means for detecting a battery charging process
M9 the battery charger is adapted to send an immobilising signal to the truck computer if a battery charging process is detected.

V. Claim 1 according to the 6th auxiliary request reads as follows (features which have been added with respect to claim 1 of the main request in bold):

Industrial truck comprising a battery (4), an onboard battery charger (5), a truck computer (6) and a CAN network (8) to which the truck computer (6) is connected,
characterised in that the battery charger (5) is connected to the CAN network (8) wherein the battery charger (5) comprises a charge detecting means (9) for detecting a battery charging process, and, if such process is detected, is adapted to send an immobilising signal to the truck computer (6),

wherein the truck computer (6) and the battery charger (5) are arranged to communicate on the CAN network (8).

VI. Claim 1 according to the 7th auxiliary request reads as follows (features which have been added with respect to claim 1 of the 6th auxiliary request in bold):

Industrial truck comprising a battery (4), an onboard battery charger (5), a truck computer (6) and a CAN network (8) to which the truck computer (6) is connected,
characterised in that the battery charger (5) is connected to the CAN network (8) wherein the battery charger (5) comprises a charge detecting means (9) for detecting a battery charging process,

wherein the charge detecting means is adapted to detect a voltage supplied to the battery charger of the industrial truck,

and, if such process is detected, is adapted to send an immobilising signal to the truck computer (6),
wherein the truck computer (6) and the battery charger

(5) are arranged to communicate on the CAN network (8).

VII. Claim 1 according to the 9th auxiliary request reads as follows (features which have been added with respect to claim 1 of the 7th auxiliary request in bold):

Industrial truck comprising a battery (4), an onboard battery charger (5), a truck computer (6) and a CAN network (8) to which the truck computer (6) is connected, characterised in that the battery charger (5) is connected to the CAN network (8) wherein the battery charger (5) comprises a charge detecting means (9) for detecting a battery charging process, and, if such process is detected, is adapted to send an immobilising signal to the truck computer (6) and

wherein the battery charger (5) is capable of charging truck batteries of different kinds and of different capacities,

whereby the battery charger (5) includes a CAN receiver/transmitter for receiving information regarding battery kind and battery capacity from the truck computer (6) via the CAN network (8),

and the Industrial truck comprises an input unit by means of which the truck computer (6) can be provided with information regarding battery kind and battery capacity.

VIII. Method claims 5 and 6 according to the 9th auxiliary request correspond to the granted claims 7 and 8 with an adapted reference:

claim 5:
Method for immobilising an industrial truck according

to any one of the claims **1-4** during charging, wherein the industrial truck comprises a truck battery (4), an onboard battery charger (5), a truck computer (6) and a CAN network (8) to which the truck computer (6) is connected, characterised in that the battery charger (5) comprises a charge detecting means (9) for detecting a battery charging process, and, if a battery charging process is in progress, sends an immobilising signal to the truck computer (6) via the CAN network (8).

claim 6:
Method for providing the onboard battery charger (5) of an industrial truck according to any one of claims **1-4** with information, wherein the industrial truck comprises a truck battery (4), a battery charger (5), a truck computer (6) and a CAN network (8) to which the truck computer (6) is connected, characterised in that the truck computer (6) provides the battery charger (5) with information regarding the truck battery (4) via the CAN network (8), that the battery charger (5) comprises a charge detecting means (9) for detecting a battery charging process and, if a battery charging process is in progress, sends an immobilising signal to the truck computer (6) via the CAN network (8).

IX. The appellant’s (opponent's) submissions as relevant to the present decision may be summarized as follows:

All the features of claim 1 as granted are disclosed by document E3 except feature M4 .

E3 in fact discloses (cf. paragraph [0020] and figure 2) a control line (30) providing a signal indicating that the charger is connected to the truck and that it

is beginning to charge the battery. This signal is further used by the truck controller to disconnect the battery from the electrical network of the truck. This means firstly, that the signal results from a charge detecting means according to feature M8 and secondly, that this signal corresponds to an immobilising signal according to feature M9, since the truck cannot be operated with a disconnected battery.

Therefore, M8 and M9 are also disclosed in E3.

With respect to inventive step, the provision of an onboard charger according to feature M4 must be regarded as an obvious feature. Assuming that feature M7, i.e. the connection of said charger to the CAN network, is not known from E3, then also this feature is obvious.
For a skilled person it is a common technical measure to connect an electrical device in a vehicle to a CAN bus. Moreover, the provision of onboard chargers in industrial trucks is generally known; this was not contested by the patent proprietor.

The further feature of auxiliary request 6 does not add any technical information to the subject-matter as defined by claim 1 as granted. The connection of the charger to the CAN network automatically means that the charger and the truck computer are arranged to communicate. Otherwise a working connection would not be established.

Also the supplementary feature of auxiliary request 7 (wherein the charge detecting means is adapted to detect a voltage supplied to the battery charger of the industrial truck) is not able to restrict the subject-matter of claim 1 over that of claim 1 of auxiliary

request 6. If the control line 30 in E3 indicates the beginning of a charging process (cf. paragraph [0016]), then necessarily the charge detecting means will detect a voltage.

The features which have been added in claim 1 according to auxiliary request 9 are based on the common general knowledge of a person skilled in the art.
It is generally known that there are chargers that are able to charge different kinds of batteries or batteries with different capacities. This is exemplified by E10 and E11. Furthermore it is commonly known to provide electrical devices such as a battery charger with a CAN receiver/transmitter. Such a CAN receiver/transmitter is mandatory for a CAN communication network which is an obvious measure in a vehicle. As a result, the additional features of claim 1 of auxiliary request 1 do not contribute to inventive step.

Furthermore, auxiliary request 9 should not be admitted into the proceedings. The amendments made to claim 1 in order to overcome inventive step objections are not convergent in respect of the amendments made to claim 1 of the 6th respectively the 7th auxiliary request.
It is an established criterion that the claimed subject-matter of auxiliary requests should be narrowed in a convergent manner. Thus, the Board should not admit auxiliary request 9 under Article 12(4) RPBA.

X. The respondent’s (patent proprietor's) rebuttal was essentially the following:

Document E3 does not disclose features M4, M7, M8 and M9 of claim 1 as granted. In particular, there is no disclosure in E3 that the battery charger comprises a

charge detecting means. The signal on line 30 (cf. figure 2 and paragraph [0016]) does only indicate that the charger is connected to the battery. This does not automatically mean that the charger is connected to the mains and ready to charge.
With respect to feature M9, signal 30 cannot be compared with an immobilising signal in the sense of the invention (cf. again figure 2 and paragraph [0016]). For a vehicle with an onboard charger is has to be made sure that the vehicle is blocked in a way that any unintentional movement is avoided. In this connection it is important not only to prevent the operator to start the truck but also to activate the brakes for inhibiting an inadvertent rolling.
E3 would lead the skilled person away from integrating the charger onboard the vehicle, since the purpose of E3 is to increase the charging speed by removing heat generated during charging.

The further feature of claim 1 of the auxiliary request 6 clarifies that both the charger and the truck computer communicate with each other in order to improve the charging process.

The additional feature of claim 1 of auxiliary request 7 limits feature M8 by requiring that the charger is not only plugged to the battery but is also ready to charge, i.e. that the charger is connected to the power supply lines and a voltage is then detected by the charge detecting means.

The subject-matter of claim 1 of auxiliary request 9 is inventive over E3 in combination with common general knowledge or the disclosure of E10 or E11.

None of the documents of the state of the art discloses

the possibility to charge different kinds of battery and to gather the information about the battery from the truck computer via a CAN network. Since there is no hint in the state of the art, the skilled person has no motivation to integrate all these features in the truck according to E3.

Auxiliary request 9 should be admitted into the proceedings. Claim 1 of this request had already been filed during opposition proceedings as auxiliary request 3.

Reasons for the Decision

1. The subject-matter of claim 1 as granted does not involve an inventive step, Article 56 EPC.

1.1 E3 does not disclose features M4 and M7 of claim 1 as granted, namely

M4: the battery charger is an onboard charger and
M7: the battery charger is connected to the CAN network.

1.1.1 The respondent´s argument that E3 does not disclose an immobilizing signal according to the feature M9 of claim 1 is not convincing.

According to paragraph [0016] the truck controller detects a signal on control line 30 (cf. figure 2). Further, in the same paragraph it is disclosed that "upon detecting the signal on control line 30, the controller 22" of the truck may disconnect the battery from electrical equipment of the vehicle other than fan 16 and from the vehicle electric motor 9. The respondent submits that "immobilizing" in the sense of

the invention does not only mean that the vehicle cannot be operated by a driver but also that it must be blocked to avoid any unintentional movement, e.g. by activating the vehicle brake.

However, in the absence of a corresponding definition in the patent specification, the Board does not follow this narrow interpretation of the term "immobilizing". Even in paragraph [0005] of the patent, referred to by the respondent, it is only described that the "industrial truck must somehow be blocked, so that it is not possible for an operator to unintentionally drive the connected truck away". Thus this passage merely describes that an active action to start the vehicle is prevented, but not an inadvertent rolling. Accordingly, disconnecting the battery from the electric vehicle motor as disclosed by E3 corresponds to immobilizing the vehicle.

1.1.2 It is further contested by the respondent that E3 discloses that the battery charger comprises charge detecting means for detecting a battery charging process (according to feature M8).

However, again paragraph [0016] of E3 explains that the control signal on line 30 indicates to the truck controller that the charger 18 begins to charge the battery.

The respondent argues that the control signal only indicates whether or not the charger is plugged into the truck which does not automatically mean that the charger is connected to the mains.

In the Board´s view, this would mean that the charger would be able to generate a signal on line 30 without

any connection to a current source, which is – however - not realistic.

1.1.3 Accordingly, it follows from the disclosure in paragraph [0016] of E3 that the battery charger comprises a charge detecting means for detecting a battery charging process (since a signal indicating the beginning of a battery charging session is sent through control line 30, a charge detecting means is present in the battery charger) and that the battery charger is adapted to send (via control line 30) an immobilising signal (the signal indicating the beginning of a charging session through control line 30 causes an electrical interlock switch 20 to disconnect the battery from the vehicle electric motor and thus functions as an immobilising signals) to the truck computer if a battery charging process is detected.

1.1.4 However, contrary to the appellant's view, E3 does not disclose feature M7, i.e. a battery charger connected to a CAN network. Although paragraph [0030] of E3 discloses that any of the connections between controller 22, battery, monitor 32, and computer 38 can be through a CAN bus, and paragraph [0029] that there is a data connection between the computer 38 and the battery charger, there is no clear and unambiguous disclosure of the battery charger 18 being connected to a CAN network (i.e. of any of lines 40 or 24 in Fig. 3 being a CAN bus). It is noted in this respect that the connection to a CAN network can only be understood as being a direct one, not an indirect one as argued by the Opposition Division on page 8 of the contested decision.

1.2 The implementation of features M4 and M7 into the industrial truck according to E3 does not contribute to

inventive step. Indeed, the integration of the charger in the truck and its connection to an existing CAN network are obvious measures for the skilled person: onboard chargers are generally known (which is not contested by the respondent) as well as the connection of electrical vehicle components via a CAN network.

The respondent´s line of argument that E3 leads away from an integration of a battery in the truck since E3 focusses on charging speed aspects is not convincing since these aspects are related to the provision of a battery cooling fan (see claim 1 of E3) and this has nothing to do with the provision of an onboard charger and a connection to a CAN network.

2. The subject-matter of claim 1 of auxiliary request 6 does not involve an inventive step, Article 56 EPC.

2.1 In addition to the features of claim 1 as granted, claim 1 of auxiliary request 6 additionally defines that

> the truck computer (6) and the battery charger (5) are arranged to communicate on the CAN network (8).

2.2 The respondent/patent proprietor submits that the supplementary feature clarifies that not only a connection of the components to the CAN network is intended but a communication between the truck controller and the charger to control the charging process.

It is firstly to be noted that the added feature does not specify what kind of information is shared between these components. Moreover, when connecting the battery charger of E3 to the CAN network in an obvious manner

as explained with respect to the main request, the battery charger would be connected to the CAN network to which also the truck computer is connected. Accordingly, as pointed out by the appellant, the battery charger and the truck computer would automatically be arranged to communicate on the CAN network.

3. The subject-matter of claim 1 of auxiliary request 7 (as filed during the oral proceedings) does not involve an inventive step, Article 56 EPC.

3.1 Claim 1 of auxiliary request 7 contains additionally the following feature as compared to claim 1 of auxiliary request 6:

> wherein the charge detecting means is adapted to detect a voltage supplied to the battery charger of the industrial truck.

3.2 The respondent explains that this feature makes it clear that the charging signal is only given to the truck controller if the charger is connected to the power supply.

As already stated in sections 1.1.2 and 1.1.3 (above), signal 30 is the output signal of the charge detecting means in the battery charger.

Signal 30 is only present if the charger is connected to the power supply and delivers a charging current to the truck. As a consequence the detecting means according to E3 are able to detect a voltage supplied to the charger.
Therefore, the additional feature of claim 1 of auxiliary request 7 does not add any further

distinguishing technical feature over E3. The subject-matter of this claim thus lacks an inventive step for the same reasons as claim 1 according to auxiliary request 6.

4. The subject-matter of claim 1 of auxiliary request 9 involves an inventive step, Article 56 EPC.

4.1 The subject-matter of claim 1 differs from the industrial truck according to E3 at least in that

> the battery charger is an onboard battery charger;
>
> the battery charger is capable of charging truck batteries of different kinds and of different capacities,
>
> whereby the battery charger includes a CAN receiver/transmitter for receiving information regarding battery kind and battery capacity from the truck computer via CAN network.

It is not disputed by the appellant that these features are not disclosed in E3.

4.2 The Board does not follow the appellant in its argument that these features are rendered obvious by the general knowledge of a skilled person or by the disclosure of E10 or E11, respectively.

None of the documents cited by the appellant discloses a battery charger including a CAN receiver/transmitter. Nor does any of the documents state that the battery charger is capable of charging truck batteries of different kinds and of different capacities.

4.3 The Board notes that the storage of battery data in the truck computer in combination with a battery charger, which is capable of charging truck batteries of different kinds and of different capacities improves the usability of the industrial truck. The CAN Bus network supports the transfer of relevant battery data between the battery charger and the truck computer.

4.4 E10 describes a method of charging a battery whereby the battery charger is controlled by a PC/EDV. The information about the kind of battery and its capacity is stored in a controller, belonging to the battery, cf. column 1, lines 18 et seq. The PC/EDV, the charger and the battery are connected by a "BatterieBus" which is a specific data communication standard of the "Zentralverband der Elektrotechnik- und Elektronik-industrie e.V.", ZVEI. Thus, starting from E3, the skilled person would have

- to implement the charging method according to E10, thereby
- using a CAN BUS instead of the BatterieBus and
- storing battery information about kind and capacity in the truck controller rather than in the battery.

However, the appellant failed to explain what would motivate the skilled person to do so.

4.5 The disclosure of E11 is even farther away from the subject-matter of claim 1 than E10.

E11 only shows an industrial truck whereby information about the battery conditions are gathered by an external device connected to the truck controller. Again, neither a CAN bus, nor a battery charger which is capable of charging batteries of different kinds or

capacities, nor a storage of battery kind or capacity in the truck controller is disclosed.

The lines of argument with respect to E10 and E11 of the appellant are therefore based on hindsight.

4.6 Since method claims 5 and 6 refer to the industrial truck according to claim 1, its subject-matter is based on inventive step for the same reasons as stated above.

Contrary to the appellant's view, the reference to claim 1 in claims 5 ("method for immobilising an industrial truck according to any one of the claims 1-4 during charging") and 6 ("method for providing the onboard battery charger (5) of an industrial truck according to any one of claims 1-4 with information") makes it clear that the claimed method requires the use of an industrial truck having at least all the features of claim 1 according to auxiliary request 9, not only the features of the industrial truck explicitly recited in the method claims.

5. Auxiliary request 9, as filed with letter of 21 November 2018, is admitted into the appeal proceedings.

5.1 According to Article 12(4) RPBA, without prejudice to the power of the Board to hold inadmissible facts, evidence or requests which could have been presented or were not admitted in the first instance proceedings, everything presented by the parties under Article 12(1) shall be taken into account by the Board if and to the extent it relates to the case under appeal and meets the requirements in Article 12(2).

5.1.1 Claim 1 of auxiliary request 9 is identical to claim 1 of auxiliary request 3 as filed in the proceedings before the opposition division. The same claim 1 has been filed in appeal proceedings in connection with auxiliary request 4, with the respondent's letter of reply and again in connection with auxiliary request 9 with letter of 21 November 2018.

These auxiliary requests essentially only differ from each other by the references to the "industrial truck" claims in the method claims (claims 5 and 6 of said auxiliary request 3 refer back to claims 1-4 and 3-4, respectively; claims 5 and 6 of said auxiliary request 4 do not contain any reference; claims 5 and 6 of auxiliary request 9 refer back to claims 1-4).

Accordingly, the differences between these auxiliary requests are not substantial in the sense that they would require different considerations by the appellant and by the Board. This was not contested by the Appellant.

Thus, there would be no reason for the Board to exercise its discretion pursuant to Article 12(4) RPBA not to admit auxiliary request 4 as filed with the reply to the statement of grounds of appeal, as a substantially corresponding auxiliary request 3 was already filed during opposition proceedings. As regards auxiliary request 9 filed with letter dated 21 November 2018, the Board exercises its discretion to admit it into the appeal proceedings pursuant to Article 13(1)RPBA as it substantially corresponds to the above-mentioned auxiliary request 4.

5.2 Consequently, the fact that the subject-matter of claim 1 according to auxiliary request 9 is not

convergent with respect to the subject-matter of claim 1 of the 6th or the 7th auxiliary request as objected by the appellant cannot play any role in view of the admissibility of auxiliary request 9.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to maintain the patent in amended form on the basis of the claims of the 9th auxiliary request as filed with letter dated 21 November 2018 and a description to be adapted.

The Registrar: The Chairman:

A. Vottner G. Pricolo

Decision electronically authenticated