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Datasheet for the decision of 22 April 2009

Case Number: T 1775/07 - 3.2.01

Application Number: 99850213.2

Publication Number: 1016578

IPC: B62B 3/06

Language of the proceedings: EN

Title of invention:
Control device for a tiller truck

Applicant:
BT Industries Aktiebolag

Opponent:
-

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step (yes) after amendment"

Decisions cited:
-

Catchword:
-

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Case Number: T 1775/07 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 22 April 2009

Appellant: BT Industries Aktiebolag
S-59581 Mjölby (SE)

Representative: Hyltner, Jan-Olof
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 10 April 2007 refusing European application No. 99850213.2 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: S. Crane
Members: J. Osborne
T. Karamanli

Summary of Facts and Submissions

I. The appeal is directed against the decision posted on 10 April 2007 refusing European patent application No. 99 85 0213.2 (EP-A-1 016 578).

II. The examining division found that the subject-matter of the then claim 1 lacked an inventive step in the light of a commonly known tiller truck in combination with:

D1: DE-A-40 32 633 or

D2: DE-A-41 28 306.

The following evidence was also cited in the file:

D3: DE-A-196 03 648

D4: US-A-5 033 326

D5: DE-A-44 44 772.

III. At oral proceedings held on 22 April 2009 the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the single request submitted at oral proceedings.

IV. Claim 1 according to the appellant's request reads as follows:

"A tiller truck of the type that includes logic circuits for the control of one or several of the functions of the truck, comprising a communication arrangement between a handle of the tiller truck and

the truck itself, characterized in that a logic unit comprising logic circuits is arranged in the handle and the communication between the logic unit and a logic unit in the truck itself takes place via a serial connection, and wherein the arrangement is such that the communication is bi-directional, to allow sensors in the truck itself to send its information to the logic unit in the handle."

Claims 2 to 9 relate to features additional to those of claim 1.

V. The appellant's submissions may be summarised as follows:

Claim 1 has been amended to clarify that the logic units form part of the subject-matter of the claim. It also has been amended to include the feature that the serial communication is bi-directional as disclosed in the original application at page 2, second paragraph. In the prior art controls on the handle of the truck are connected by a series of cables to the truck itself, passing though the hinged tiller. The plurality of cables need to be shielded against interference over their length, thereby increasing the cables' bulk and restricting their flexibility. This problem is exacerbated by a general trend to increase the number of controls. The known trucks also comprise logic circuits which receive signals from sensors, all mounted on the truck itself. The logic circuits are sensitive to shocks to which they are subjected as a consequence of their location on the truck itself. In accordance with the invention the provision of a bi-directional serial communication between the truck and

the handle increases the potential capacity for signal transmission along the tiller. As a result, logic circuits which previously were provided on the truck itself can be positioned on the handle where they are better protected from shock. None of the cited prior art has any teaching relevant to the problem or its solution as claimed.

Reasons for the Decision

Amendments (Article 123(2) EPC))

1. In comparison with the subject-matter of claim 1 as originally filed the subject-matter of present claim 1 differs essentially in that it includes the feature that the serial communication is bi-directional to allow sensors in the truck itself to send information to the logic unit in the handle. This was disclosed on page 2, lines 5 to 7 of the application as originally filed. The subject-matter of present claim 2 was included in original claim 1 but as an optional feature. Present claims 3 to 9 correspond to original claims 4 to 9 and 3 respectively. The description has been amended only for consistency with the claims and the content of the drawings is unchanged. It follows that the application has not been amended in such a way as to introduce subject-matter extending beyond that of the application as originally filed.

Patentability

2. The subject-matter of claim 1 is new in accordance with Article 54(1) EPC 1973 with respect to the available

state of the art since, as set out below, no document discloses a tiller truck having serial communication between the handle and the truck itself.

3. The closest state of the art for consideration of inventive step is that acknowledged in the application, namely a tiller truck in which controls are provided on the handle. The controls are connected to the truck itself by means of a plurality of cables, see also D5, particularly column 4, lines 21 to 26 and figure 5. The cables need to be shielded for protection from electro-magnetic interference, resulting in a bulky and inflexible bundle which must be accommodated in and move with the pivotable tiller. The trend towards increasing sophistication resulting in an increasing number of controls exacerbates the problem. Moreover, it is stated in the application that logic circuitry for receiving signals from sensors positioned on the truck itself is susceptible to damage from mechanical shocks.

3.1 The subject-matter of claim 1 differs from the known tiller truck in that a logic unit comprising logic circuits is arranged in the handle and the communication between the logic unit and a logic unit in the truck itself takes place via a serial connection and wherein the arrangement is such that the communication is bi-directional to allow sensors in the truck itself to send information to the logic unit in the handle. The serial communication can transmit a multitude of electrical signals between the handle and the truck itself without the need for a corresponding number of cables, thereby increasing the communication capacity. That increased communication capacity permits

logic units which process signals from sensors positioned on the truck itself to be positioned in the handle where they are less subject to shocks and therefore more reliable in operation.

3.2 Of the cited prior art only D4 and D5 relate to tiller trucks. As already set out above, in D5 the electrical communication between the handle and the truck itself is the conventional arrangement having a plurality of cables. D4 relates to a removable connection between the handle and the tiller and, in as far as it concerns itself with the electrical connections, merely discloses a multi-pin connector. It follows that neither of these documents would render obvious the provision of a bi-directional serial connection in a tiller truck so that logic units in the handle may receive signals from sensors on the truck itself.

3.3 D1 proposes the provision in vehicles generally of a serial connection between controls and the corresponding devices. D2 is primarily concerned with the provision in a vehicle of a non-fixed control panel but further proposes the use of a serial communication. D3 is particularly concerned with improvements in controls of vehicles such as industrial trucks but its teaching is restricted to the construction of the controls. None of D1 to D3 therefore relates to the location of logic units in a tiller truck.

4. The board concludes from the foregoing that none of the cited prior art is relevant to the problem of improving reliability of the logic units of a tiller truck and to the presently claimed solution. The subject-matter of present claim 1 therefore is considered to involve an

inventive step (Article 56 EPC 1973). Since claims 2 to 9 contain all features of claim 1 the same conclusion applies equally to them.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to grant a patent on the basis of the following documents:

   – claims 1 to 9 presented at the oral proceedings;

   – description pages 1 to 7 presented at the oral proceedings; and

   – drawings filed with a letter of 17 August 2006.

The Registrar: The Chairman:

A. Vottner S. Crane