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**Datasheet for the decision
of 4 December 2014**

Case Number: T 0458/12 - 3.2.01

Application Number: 01979086.4

Publication Number: 1322514

IPC: B62D33/067

Language of the proceedings: EN

Title of invention:

HYDRAULIC TILTING DEVICE FOR TILTING A VEHICLE CAB

Patent Proprietor:

Actuant Corporation

Opponent:

Weber-Hydraulik GmbH

Headword:

Relevant legal provisions:

EPC 1973 Art. 54(1), 84

EPC Art. 123(2)

Keyword:

Main request -Novelty -(no)

Auxiliary request- added subject-matter (yes) -clarity -(no)

Decisions cited:

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

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Case Number: T 0458/12 - 3.2.01

**D E C I S I O N
of Technical Board of Appeal 3.2.01
of 4 December 2014**

Appellant: Actuant Corporation
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Respondent: Weber-Hydraulik GmbH
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted on 23 December
2011 revoking European patent No. 1322514
pursuant to Article 101(3) (b) EPC.

Composition of the Board:

Chairman G. Pricolo
Members: Y. Lemblé
S. Fernández de Córdoba

Summary of Facts and Submissions

- I. The appeal of the Patent Proprietor is directed against the decision of the opposition division to revoke the European patent No. 1 322 514.

- II. In its decision the Opposition Division held that the subject-matter of claim 1 as granted and that of claim 1 according to the auxiliary request was not new over the disclosure of document E1: DE-C-42 29 842 (Article 100(a) EPC 1973). The Opposition Division also referred to document E2: WO-A-00/00378 as a relevant prior art.

- III. Arguing that the subject-matter of the granted patent was novel over E1 as well as E2, the Appellant requests that the decision to revoke the patent be set aside and the patent be maintained as granted (main request), or in the alternative, on the basis of the auxiliary request filed on 9 March 2012 with the statement setting out the grounds of appeal.

- IV. In the annex to the summons to oral proceedings pursuant to Article 15(1) RPBA, the Board indicated that it was of the preliminary opinion that the hydraulic tilting device of Fig. 3 of E2 anticipated the subject-matter of claim 1 as granted. As regards claim 1 of the auxiliary request, the Board indicated that there was a difference between a "lost motion range" defined by the position of the ports 41,42 and a "lost motion mode" as defined in column 7, lines 6-9 of the patent specification, inducing an ambiguity in the claim, and that the amendments made in claim 1 according to the auxiliary request did not seem to fulfil the requirements of Article 123(2) EPC.

V. In reply to the summons to oral proceedings, the Appellant informed the Board with letter dated 4 November 2014 that he would not attend the oral proceedings. No arguments were filed in reply to the objections mentioned by the Board in the annex to the summons to oral proceedings.

VI. At the oral proceedings which were held on 4 December 2014, the Appellant did not appear. The Respondent (Opponent) requested that the appeal be dismissed. It reiterated the objections mentioned by the Board.

VII. The wording of Claim 1 as granted (main request) is the following:

Hydraulic tilting device for tilting a cab of a vehicle between a driving position and a tilted position, which cab in the driving position is resiliently supported on the chassis of the vehicle, which tilting device comprises:

- a reservoir (1) for hydraulic fluid,
- a pump (3; 60) connected to the reservoir and having a delivery port (4;61;62) for delivering hydraulic fluid under pressure;
- a double-acting, hydraulic tilting cylinder (5), for tilting the cab, comprising a cylinder housing (6), containing a cylinder space (7), in which a piston/piston rod assembly (8,9) can move back and forth, the piston rod (9) of which assembly projects outwards out of the cylinder housing through a corresponding piston rod seal (11), which piston/piston rod assembly forms a pull chamber (12) in the cylinder space, which pull chamber retracts the piston/piston rod assembly when hydraulic fluid is supplied to it, and a push chamber (13), which extends the piston/piston rod when

hydraulic fluid is supplied to it, a corresponding pull connection and push connection (14,15) being provided for the pull chamber and the push chamber,

- in which in the case of the tilting cylinder a lost-motion conduit (40) is further provided, extending between ports (41,42) opening into the cylinder space of the tilting cylinder, which ports are in communication with the push chamber (13) and the pull chamber (12) respectively if the piston of the piston/rod assembly is in a lost-motion range defined by the ports (41,42), the piston/piston rod assembly being able to move up and down within that lost-motion range if the cab is carrying out spring movements in its driving position,

- a valve (43), which is disposed in the lost-motion conduit (40) and can shut off the lost-motion conduit, preferably a non-return valve (43) which closes in the direction of the pull chamber and opens at a predetermined opening pressure in the pull chamber,

- a line system (16,17) such that the pull connection and the push connection can be connected as desired to the delivery port of the pump of the reservoir,

characterized in that the tilting device is designed such that during the movements up and down of the piston of the piston/piston rod assembly within the lost-motion range hydraulic fluid is supplied from the reservoir (1) to the pull chamber (12) by way of the pull connection (14), and in that hydraulic fluid is moved from the pull chamber (12) to the reservoir (1) by way of the lost-motion conduit (40), so that in general a circulation of hydraulic fluid occurs if the cab is carrying out spring movements.

VIII. Claim 1 of the auxiliary request reads as follows (amendments with respect to granted claim 1 are underlined):

Hydraulic tilting device for tilting a cab of a vehicle between a driving position and a tilted position, which cab in the driving position is resiliently supported on the chassis of the vehicle, which tilting device comprises:

- a reservoir (1) for hydraulic fluid, which reservoir is of the airtight type with a pressure-relief valve (2), in such a way that the maximum reservoir pressure in the reservoir is limited to a pressure above atmospheric pressure;
- a pump (3; 60) connected to the reservoir and having a delivery port (4;61;62) for delivering hydraulic fluid under pressure;
- a double-acting, hydraulic tilting cylinder (5), for tilting the cab, comprising a cylinder housing (6), containing a cylinder space (7), in which a piston/piston rod assembly (8,9) can move back and forth, the piston rod (9) of which assembly projects outwards out of the cylinder housing through a corresponding piston rod seal (11), which piston/piston rod assembly forms a pull chamber (12) in the cylinder space, which pull chamber retracts the piston/piston rod assembly when hydraulic fluid is supplied to it, and a push chamber (13), which extends the piston/piston rod when hydraulic fluid is supplied to it, a corresponding pull connection and push connection (14,15) being provided for the pull chamber and the push chamber,
- in which in the case of the tilting cylinder a lost-motion conduit (40) is further provided, extending between ports (41,42) opening into the cylinder space of the tilting cylinder, which ports are in communication with the push chamber (13) and the pull chamber (12) respectively if the piston of the piston/rod assembly is in a lost-motion range defined by the ports (41,42), the piston/piston rod assembly being

able to move up and down within that lost-motion range if the cab is carrying out spring movements in its driving position,

- a valve (43), which is disposed in the lost-motion conduit (40) and can shut off the lost-motion conduit, preferably a non-return valve (43) which closes in the direction of the pull chamber and opens at a

predetermined opening pressure in the pull chamber,

- a line system (16,17) such that the pull connection and the push connection can be connected as desired to the delivery port of the pump of the reservoir,

characterized in that the tilting device is designed such that during the movements up and down of the piston of the piston/piston rod assembly within the lost-motion range hydraulic fluid is supplied from the reservoir (1) to the pull chamber (12) by way of the pull connection (14), caused by suction from the pull chamber and/or propulsion from the reservoir, wherein the reservoir pressure contributes to the supply of hydraulic fluid to the pull chamber, and in that hydraulic fluid is moved from the pull chamber (12) to the reservoir (1) by way of the lost-motion conduit (40), and in which hydraulic fluid is discharged from the push chamber (13) to the reservoir (1), so that ~~in general~~ a circulation of hydraulic fluid occurs in its entirety if the cab is carrying out spring movements, and in that in the line system between the reservoir and the pull connection, preferably near the pull connection, a throttling device is accommodated, for example a throttling device with one or more bores disposed one after the other and having a diameter of approximately 0.5 millimetre, wherein the circulation is obtained by synchronizing the opening pressure of the valves in the system and the resistances formed by the one or more throttling devices and the lines such that the pull chamber (12) remains filled with the

hydraulic fluid and such that it is ensured that the pressure in the pull chamber can constantly recover.

Reasons for the Decision

1. The appeal is admissible.
2. Main request
 - 2.1 As mentioned in paragraph [0014] of the patent specification EP-B-1 322 514, all the features of the preamble of claim 1 are known from document E2. This was not disputed by the parties.

Indeed, document E2 disclosed in Fig. 3 a hydraulic tilting device for tilting a cab of a vehicle between a driving position and a tilted position, which cab in the driving position is resiliently supported on the chassis of the vehicle, which tilting device comprises:

- a reservoir 1 for hydraulic fluid,
- a pump 65 connected to the reservoir and having a delivery port 66 for delivering hydraulic fluid under pressure;
- a double-acting, hydraulic tilting cylinder 5, for tilting the cab, comprising a cylinder housing 6, containing a cylinder space, in which a piston/piston rod assembly 8,9 can move back and forth, the piston rod 9 of which assembly projects outwards out of the cylinder housing through a corresponding piston rod seal, which piston/piston rod assembly forms a pull chamber 12 in the cylinder space, which pull chamber retracts the piston/piston rod assembly when hydraulic fluid is supplied to it, and a push chamber 13, which extends the piston/piston rod when hydraulic fluid is supplied to it, a corresponding pull connection and

push connection 14,15 being provided for the pull chamber and the push chamber,
- in which in the case of the tilting cylinder a lost-motion conduit 30 is further provided, extending between ports 31,32 opening into the cylinder space of the tilting cylinder, which ports are in communication with the push chamber 13 and the pull chamber 12 respectively if the piston of the piston/rod assembly is in a lost-motion range defined by the ports 31,32, the piston/piston rod assembly being able to move up and down within that lost-motion range if the cab is carrying out spring movements in its driving position,
- a valve 33, which is disposed in the lost-motion conduit 30 and can shut off the lost-motion conduit, preferably a non-return valve 33 which closes in the direction of the pull chamber and opens at a predetermined opening pressure in the pull chamber,
- a line system 16,22 such that the pull connection and the push connection can be connected as desired to the delivery port of the pump or the reservoir.

2.2 As regards the features of the characterizing part of claim 1, the tilting device of Fig. 3 of E2 is designed such that during the movements up and down of the piston/piston rod assembly within the lost-motion range hydraulic fluid is supplied from the reservoir 1 to the pull chamber 12 by way of the pull connection 14,16 and in that hydraulic fluid is moved from the pull chamber 12 to the reservoir 1 by way of the lost-motion conduit 30, so that in general a circulation of hydraulic fluid occurs if the cab is carrying out spring movements (see page 9, lines 8-13 and page 12, line 35 to page 13, line 3).

Therefore the subject-matter of claim 1 lacks novelty over the tilting device of Fig. 3 of E2.

3. Auxiliary request

In the auxiliary request, claim 1 has been amended by introducing features from dependent claims 2, 3 and 6 and from the description of the patent specification.

For the Board, the amendments made in claim 1 according to this request do not fulfil the requirements of Article 123(2) EPC. In particular, the amendment: "by the ~~various~~ **one or more** throttling devices" has no clear antecedent in the originally filed application documents.

Moreover, the added features coming from the description relate to the circulation of the fluid in the "lost motion mode" of the hydraulic tilting device, a motion mode which is defined in column 7, lines 6-9 of the patent specification (pump 3 switched off and valve 20 in neutral). There is a difference between a "lost motion range" defined by the position of the ports 41,42 (see claim 1) and the "lost motion mode". Therefore, the term "motion range" used in claim 1 of this request appears to be ambiguous and contrary to the requirement of clarity (Article 84 EPC).

4. It follows from the foregoing that none of the requests of the Appellant (Patent Proprietor) can be allowed, since the respective claim 1 of these requests fails to satisfy the requirements of the EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Vottner

G. Pricolo

Decision electronically authenticated