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**Datasheet for the decision
of 23 March 2018**

Case Number: T 0353/15 - 3.2.01

Application Number: 07768911.5

Publication Number: 1993902

IPC: B63B17/00, B66F7/20, B66C13/02,
B66F11/04

Language of the proceedings: EN

Title of invention:

VESSEL, MOTION PLATFORM, METHOD FOR COMPENSATING MOTIONS OF A
VESSEL AND USE OF A STEWART PLATFORM

Patent Proprietor:

Ampelmann Holding B.V.

Opponent:

Bosch Rexroth AG

Headword:

Relevant legal provisions:

EPC Art. 56

Keyword:

Inventive step (yes)

Decisions cited:

Catchword:



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Case Number: T 0353/15 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 23 March 2018

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
23 December 2014 concerning maintenance of the
European Patent No. 1993902 in amended form.**

Composition of the Board:

Chairman G. Pricolo
Members: C. Narcisi
O. Loizou

Summary of Facts and Submissions

I. European patent No. 1 993 902 was maintained in amended form by the decision of the Opposition Division posted on 23 December 2014. Against the decision an appeal was lodged by the Opponent on 16 February 2015 and by the Patentee on 19 February 2015 and the respective appeal fees were paid. The statement of grounds of appeal was filed by the Opponent and by the Patentee respectively on 4 May 2015 and 1 May 2015.

II. Oral proceedings were held on 23 March 2018. Appellant I (Opponent) requested that the appealed decision be set aside and that the patent be revoked. Appellant II (Patentee) requested that the appealed decision be set aside and that the patent be maintained in amended form according to the main (and sole) request as submitted during oral proceedings on 23 March 2018. All previously filed auxiliary requests were withdrawn.

III. Claim 1 reads as follows:

"A vessel (1) with a motion compensating platform (4) for transferring a load from and/or to the vessel, which platform (4) is provided with:
at least one carrier (6) for bearing, moving and transferring a load;
actuators (5) for moving the at least one carrier (6) relative to the vessel (1), in six degrees of freedom;
a control system, for driving the actuators (5);
and motion sensors (7) for measuring motions of the vessel (1) relative to at least one element in the surrounding area, which measurements are used as input for the control system;
characterized in that at least one at least partly passive pressure element (9) is provided, for

furnishing, during use, a pressure on the carrier (6) for at least partly bearing this, wherein the platform is a Steward type platform wherein the carrier is carried on six hydraulic cylinders, wherein each actuator (5) has a driving direction and wherein for each driving direction at least one corresponding pressure element (10) is designed for applying pressure in a parallel direction."

Claim 7 reads as follows:

"A Steward type motion platform (4), for a vessel (1) as described in any one of claims 1-8, which platform (4) is provided with at least one carrier (6), for bearing, moving and/or transferring a load, actuators (5) for moving the carrier (6), in six degrees of freedom, relative to at least one fixed point of the actuators (5), and a control system (8), the control system (8) being designed for driving the actuators (5) for said relative movement of the carrier (6), characterized in that at least one at least partly passive pressure element (10) is provided for at least partly compensating the gravity of the load, wherein the carrier is carried on six hydraulic cylinders, wherein each actuator (5) has a driving direction and wherein for each driving direction at least one corresponding pressure element (10) is designed for applying pressure in a parallel direction."

Claim 9 reads as follows:

"A method for compensating motions of a vessel (1) using a Steward type platform, wherein a carrier is carried on six hydraulic cylinders, wherein the motions of the vessel (1) are measured, wherein the carrier (6) with a load is driven such that the carrier (6) is held

substantially stationary relative to at least one element (2) in the surrounding area, while the gravity of a load is at least partly compensated by providing a substantially constant counterpressure on the carrier (6),

wherein the carrier (6) is part of a motion platform (4), the platform (4) further comprising actuators (5) for moving the carrier (6), in six degrees of freedom, relative to at least one fixed point of the actuators (5), and a control system (8), the control system (8) being designed for driving the actuators (5) for said relative movement of the carrier (6), wherein at least one at least partly passive pressure element (10) is provided for at least partly compensating the gravity of the load,

wherein each actuator (5) has a driving direction and wherein for each driving direction at least one corresponding pressure element (10) is designed for applying pressure in a parallel direction."

IV. The Opponent's arguments may be summarized as follows:

The subject-matter of claim 1 (and of related independent claims 7 and 9) is not inventive over document D6 (J. van der Tempel et al.: "Der Ampelmann; Safe and easy access to offshore wind turbines", Conference & Exhibition Wind Energy 2004 London, EWEA, 2004 (Paper from the EWEA Conference, London, 22 to 25 November 2004)) in view of D14 (US-B1-6 468 082). The claimed vessel differs from the vessel disclosed in D6 merely in that "at least one at least partly passive pressure element (9) is provided, for furnishing, during use, a pressure on the carrier (6) for at least partly bearing this" (hereinafter designated as feature

(i)) and in that "for each driving direction at least one corresponding pressure element (10) is designed for applying pressure in a parallel direction" (hereinafter designated as feature (ii)), these features not being disclosed in D6. Nevertheless, these features are known from D14 and therefore the claimed subject-matter would undoubtedly result from the obvious combination of D6 and D14. In effect, the skilled person starting from D6 would face the objective technical problem of improving energy efficiency by reducing the amount of energy required for operating the actuators (5) and the hydraulic cylinders supporting and moving the carrier (6). The skilled person would retain document D14 which discloses the general concept of using at least partly passive pressure elements to compensate at least partly for the load moved by the carrier (6). This concept, clearly reducing the amount of energy necessary for moving the load, is moreover generally known to the skilled person, as likewise demonstrated by the further cited prior art (e.g. D3 (US-A-3 912 227), D4 (US-A-5 605 462), D13 (US-B-6 659 703)). Thus, as suggested by D14 (see figure 10), the skilled person would obviously implement a Stewart platform having at least partly passive pressure elements as shown in figures 2 to 4 (see D14, column 5, line 66-column 6, line 11) in the vessel of D6. Further, it would also be obvious in view of D14 (see column 6, lines 11-37) to provide pressure elements acting each in a direction parallel to each driving direction of the actuator, thereby obtaining both features (i) and (ii) in an obvious manner. Therefore, the skilled person would arrive at the claimed subject-matter without an inventive step being involved.

The subject-matter of claim 1 lacks an inventive step over D6 in view of a public prior use, which is

demonstrated by documents D21a and D21b and is further to be proven by the requested hearing of two witnesses. Specifically, D21a and D21b disclose a heave compensating system for a drill ship, comprising active and passive pneumatic cylinders which are coaxially arranged. Thus, the use of a passive pneumatic cylinder coaxially disposed (to the active cylinder) is obviously suggested to the skilled person, wherein faster active movement of the actuator and lower power consumption is thereby achieved. Hence, the claimed subject-matter would be derived without exercising an inventive activity.

Equivalent and corresponding arguments apply in respect of independent claims 7 and 9, which likewise lack an inventive step over D6 and D14, or over D6, D21a and D21b.

V. The Patentee's arguments may be summarized as follows:

The subject-matter of claim 1 is inventive over D6 and D14. First, the skilled person, starting from D6, would not obviously combine these documents, for the objective technical problem mentioned by the Opponent is not deducible from and not even suggested in D6. Second, even if the skilled person would retrieve D14, it would nonetheless not retain this document. Indeed, D14 discloses essentially (flight) simulation platforms and devices, whose actuators are not apt to be mounted on a vessel and to perform huge displacements as required in offshore applications as implied by D6, wherein platforms for transferring loads and personnel are used. Finally even if the skilled person were to

combine D6 and D14, this would not result in the subject-matter of claim 1. Particularly, there is no motivation for the skilled person and no indication or hint given in D14 to use the actuators shown in figures 2 to 4 in conjunction with a Stewart type platform according to figure 10 of D14. In particular, figures 8 and 9 show a vertical, centrally arranged pressure element or compliant support member for at least partly bearing the static load of the platform, which pressure element is clearly also apt and well suited for supporting the Stewart type platform of figure 10.

Documents D21a and D21b should not be admitted into the appeal proceedings since they were filed late without any reason being given for this late filing. In addition, they are not relevant to the subject-matter of claim 1 (and related claims 7 and 9), given their disclosure relating only to active heave compensation systems. Hence, the combination of D6 with D21a and D21b would not be obvious for the skilled person and would not lead to the claimed subject-matter.

Reasons for the Decision

1. The subject-matter of claim 1 meets the requirements of Article 123(2) EPC as it results from the combination of granted claims 1, 4, 5 and 9 which were not objected to by the Opponent on the grounds of Article 100(c) EPC. Related claims 7 and 9 also meet these requirements since they include a motion compensating platform having the same features as the motion compensating platform included in claim 1.

2. The subject-matter of claim 1 is not rendered obvious by documents D6 and D14. The vessel according to claim 1 undisputedly differs from the vessel known from D6 by aforesaid features (i) (i.e. "at least one at least partly passive pressure element (9) is provided, for furnishing, during use, a pressure on the carrier (6) for at least partly bearing this") and (ii) (i.e. "for each driving direction at least one corresponding pressure element (10) is designed for applying pressure in a parallel direction").

Starting from D6 the skilled person would face the technical problem of improving control of the actuators by reducing the power required to operate the hydraulic cylinders and reducing energy consumption. The skilled person would recognize that D14 provides a solution to this problem, for it discloses a (at least partly passive) support member or an assembly by which the static load of the motion platform (or carrier) is counteracted so as to remove the requirement for the actuators to generate a continuous force supporting the load (see D14, e.g. figures 8, 9; column 11, line 61-column 12, line 23). This general technical concept is likewise known from further cited documents (see e.g. D3, D4, D13), as emphasized by the Opponent, and it would be obvious for the skilled person to adopt this general concept in the platform according to claim 1 by implementing a corresponding technical measure. Thus, feature (i) would be obtained without the involvement of an inventive step.

As to feature (ii) the Board considers that it is not rendered obvious by the combination of D6 and D14, as this feature would not necessarily and inevitably ensue from the obvious combination of D6 and D14 in view of the aforementioned objective technical problem. In effect, D14 proposes a general technical concept according to feature (i) (see e.g. D14, claims 1 and

2), which is clearly to be implemented in all the embodiments disclosed in D14. By contrast, feature (ii) is more specific than feature (i), and it is nowhere indicated in D14 that implementing this feature in a Stewart type platform would result in further or additional reduction of power requirements and energy consumption (as compared to mere implementation of feature (i)). Such evidence was also not provided by the Opponent. Finally, the implementation of feature (ii) in a Stewart type platform is disclosed in D14 at best merely as an option (see e.g. column 6, lines 12-37; figure 10 and related description), D14 including no clear and unambiguous disclosure of such an embodiment. Thus, feature (ii) is not rendered obvious from the combination of D6 and D14. For the above reasons the subject-matter of claim 1 complies with the requirements of Article 56 EPC.

For the same reasons as above the subject-matter of independent claims 7 and 9 is not rendered obvious by the cited prior art.

3. The public availability of documents D21a and D21b representing an alleged public prior use was not discussed during oral proceedings and no decision was given by the Board in this respect. Moreover, the issue of admissibility of these documents into the appeal proceedings pursuant to Article 12(4) RPBA (Rules of Procedure of the Boards of Appeal) can be left open, for the Board judges that the disclosure of these documents in combination with D6 would anyway not render obvious the subject-matter of claim 1 (and of related claims 7 and 9) (Article 56 EPC). As pointed out to the Appellant I during the oral proceedings by the Board, D21a and D21b merely illustrate a heave compensation system, particularly to be mounted on a

vessel. Such a system does not possess six degrees of freedom and does not disclose or let alone suggest feature (ii), thus being clearly less relevant than the motion compensation platform of D14.

4. Finally, there is no need to consider other objections raised by the parties during appeal proceedings, as they were all withdrawn at the end of the oral proceedings as stated in the minutes.

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 following:

Description:

Columns 1-7 as filed during oral proceedings;

Claims:

No. 1-10 of the main request as filed during oral proceedings;

Drawings:

Fig. 1-7 of the patent as granted.

The Registrar:

The Chairman:



A. Vottner

G. Pricolo

Decision electronically authenticated