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D E C I S I O N
of 2 February 2005

Case Number: T 0854/03 - 3.2.1

Application Number: 96301677.9

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Language of the proceedings: EN

Title of invention:

Semisubmersible vessel with forward mounted crane

Patentee:

Manning, Foster T.

Opponent:

Huisman Special Lifting Equipment B.V.

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56

Keyword:

"Novelty - main request - (no) "

"Inventive step - auxiliary request - (no) "

Decisions cited:

T 0023/86, T 0016/87

Catchword:

-



Case Number: T 0854/03 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 2 February 2005

Appellant: Manning, Foster T.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 2 June 2003
revoking European patent No. 0732258 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: S. Crane
Members: Y. A. F. Lemblé
S. U. Hoffmann

Summary of Facts and Submissions

I. The appeal is directed against the decision of the Opposition Division posted 2 June 2003 to revoke the European patent No. 0 732 258. The patent had been opposed on the grounds of lack of novelty and lack of inventive step of its subject-matter under the terms of Article 100(a) EPC.

II. In its decision the Opposition Division held that the subject-matter of granted claim 1 did not involve an inventive step having regard to the following prior art documents:

D2: Article describing the semi-submersible crane vessel "Balder", published in 1978 by the European Offshore Petroleum Conference and Exhibition and presented at the European Offshore Petroleum Conference and Exhibition in London, 24-27 October 1978

D3: Article entitled "Derrick Barge 102", published in 1986 by McDermott International Inc., 140 Wembley Park Drive, Wembley, Middlesex, England

III. A notice of appeal against this decision was filed on 5 August 2003 and the fee for appeal paid at the same day. The statement of grounds of appeal was filed on 10 October 2003.

IV. During oral proceedings held 2 February 2005 the appellant (patent proprietor) requested that the decision to revoke the patent be set aside and the patent be maintained as granted (main request), or in

the alternative that the patent be maintained on the basis of the seventh auxiliary request filed on 10 October 2003 with the statement of grounds of appeal. The preceding auxiliary requests 1 to 6, also filed with the statement of grounds of appeal, were withdrawn.

The respondents requested that the appeal be dismissed.

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

"1. A semisubmersible floating vessel (2) of a type having a pair of substantially parallel, laterally spaced buoyant hulls (4) with ballast chambers to permit said hulls (4) to be moved between a submerged condition and a surface floating condition, a row of columns (8) supported by and extending upwardly from each said hull (4), and a working platform (10) supported by the upper ends of said columns (8), said vessel (2) comprising:

a crane (50) mounted on said platform (10) adjacent to an end of said platform (10), said crane (50) having sufficient capacity to lift loads off said end of said platform (10) and at least one side of said platform (10) and from a portion of said platform (10) extending from said end of said platform (10) to at least about halfway to an opposite end of said platform (10); and a support structure (56, 58, 14, 60, 62) for said crane (40);

characterised in that said structure (56, 58, 14, 60, 62) extends downwardly from said crane (50), through said platform (10) to one of said columns (8), and down into said one of said columns (8); and said structure (56, 58, 14, 60, 62) is fixedly secured to sidewall portions of said one of said columns (8) to provide a continuous

path for transmitting forces created by operation of said crane (50) to said one of said columns (8)."

Claim 1 of the auxiliary request reads:

"1. A semisubmersible floating vessel (2) of a type having a pair of substantially parallel, laterally spaced buoyant hulls (4) with ballast chambers to permit said hulls (4) to be moved between a submerged condition and a surface floating condition, a row of columns (8) supported by and extending upwardly from each said hull (4), and a working platform (10) supported by the upper ends of said columns (8), said vessel (2) comprising:

a crane (50) mounted on said platform (10) adjacent to an end of said platform (10), said crane (50) having sufficient capacity to lift loads off said end of said platform (10) and at least one side of said platform (10) and from a portion of said platform (10) extending from said end of said platform (10) to at least about halfway to an opposite end of said platform (10); and a support structure (56, 58, 14, 60, 62) for said crane (40); and wherein:

the platform (10) forms a buoyant body to provide the vessel with reserve buoyancy;

characterised in that said structure (56, 58, 14, 60, 62) extends downwardly from said crane (50), through said platform (10) to one of said columns (8), and down into said one of said columns (8); and said structure (56, 58, 14, 60, 62) is fixedly secured to sidewall portions of said one of said columns (8) to provide a continuous path for transmitting forces created by operation of said crane (50) to said one of said columns (8)."

VI. The submission of the appellant can be summarized as follows:

Main request

It was known, in prior art semi-submersible vessels of the type according to the preamble of claim 1 (see e.g. US-A-4 165 702), to arrange the crane adjacent to an end of the working platform and between the upper ends of the columns which supported the platform. The forces created by the operation of such a crane were distributed across an entire structural framework formed by the upper hull of the platform and the plurality of columns supporting that hull. In contrast thereto, the support structure defined in the characterising part of claim 1 was specially dedicated to directly coupling the crane to the column beneath the crane, thus providing a continuous path for transmitting the forces induced by the operation of the crane into that single column. A crane support structure as defined in the characterising part of claim 1 was not directly and unambiguously disclosed by either of the documents D2 or D3. The design of the crane support structure of D2 did not differ fundamentally from that of the prior art mentioned above; it also consisted of an extensive conventional intermediary structural framework, e.g. the upper hull, terminating at its bottom surface and supported by a plurality of columns through which all forces were dissipated. All the columns of D2 had the same structure and the increased cross-sectional area of the columns on the crane's side in Figure 1 of D2 was only aimed at increasing the buoyancy to compensate for the

weight of the crane (see page 102 of D2, last paragraph in the left-hand column).

Auxiliary request

Claim 1 of the auxiliary request comprised former claim 1 as granted in combination with dependent claim 8 as granted and according to which the platform formed a buoyant body to provide the vessel with reserve buoyancy. Although that additional feature was inadvertently presented as part of the preamble of the claim, it inventively distinguished the claimed subject-matter from the prior art. To form the platform as a buoyant body provided a supplementary safeguard against catastrophic conditions and increased the water plane area along the waterline under such conditions. D2 and D3 were silent as regards this particular feature. Although the platform of D2 was apparently subdivided into compartments by means of bulkheads, there was no hint or suggestion that these should be watertight.

VII. The respondents argued essentially in the following way:

Main request

The man skilled in the art, considering the layout of the semi-submersible vessel as disclosed in the part entitled "Fig. 1 General arrangement" on page 107 of D2, would immediately recognise in the structural arrangement of the bulkheads in the main deck and in the column beneath the crane all of the features of the characterising part of claim 1.

Auxiliary request

The additional feature of dependent claim 8 of the patent did not involve an inventive step since it was a standard practice imposed by regulations to provide the deck structure of similar vessels with reserve buoyancy in order to increase their safety (see column 7, lines 13 to 16 of the patent).

Reasons for the Decision

1. The appeal meets the requirements of Articles 106 to 108 and Rule 64 EPC and is therefore admissible.
2. *Main request; Novelty*

As is readily apparent from the title and Figure 1 of D2, the semi-submersible vessel of D2 comprises all of the features of the preamble of claim 1 as granted. This has not been contested by the appellant (see also point 4.20 of the statement of appeal).

The crane of D2 must be supported in some way by the vessel and it cannot be denied that D2 discloses a support structure capable of withstanding the forces and moments created by the operation of the crane. It is also indisputable that a structural integrity between that support structure and the vessel has to be achieved.

The appellant considered that the crane shown in Figure 1 of D2 is supported by an extensive intermediary structural framework (e.g. the upper hull)

terminating at its bottom surface and supported by a plurality of columns through which all forces are dissipated. His contention is that such an intermediary framework cannot be considered as a structure as defined in the characterising part of claim 1.

This raises the question of the exact definition of the term "support structure" and whether there are clear boundaries for it. In a number of decisions, such as T 23/86 (OJ 1987, 316), T 16/87 (OJ 1992, 212), the boards of appeal laid down the principle that the description and drawings are used to interpret the claims when an objective assessment of their content has to be made to judge whether their subject-matter is novel.

Turning to the content of the patent for the interpretation of the term "support structure", the Board notes that Figures 7A to 7E of the specification show longitudinal and lateral bulkheads 14,16 that are, at the same time, part of the support structure for the crane (column 8, lines 53 ff.) and of the structural framework forming the upper hull. According to column 7, lines 20 to 27 of the patent, the longitudinal and lateral bulkheads 14,16 extend in their respective direction along the "full length of", or respectively "fully or partially across the vessel". Column 8, lines 53 to 55 of the patent reads: "The column support 56, transition portion 58, and bulkheads 14, 60 are **integrally formed with each other and/or securely joined** to provide a continuous path for transmitting forces created by operation of the crane 50 to the underlying column 8" (Bold characters by the Board).

Hence, in the structural arrangement described in the patent, there is no determinate boundaries for the claimed support structure and a clear division between the intermediary framework and the claimed support structure cannot be drawn.

Returning now to D2, the part entitled "Fig. 1 General arrangement" depicts a side elevation view and several plan and sectional views of the vessel along different horizontal levels (floater, columns, main deck, upper deck). As shown, the structural strength of the vessel is given by subdividing the hulls into compartments by means of bulkheads and decks. Especially the upper and lower left-hand corners of the sectional view "main deck" and of the sectional view "columns" show that the configuration of the bulkheads in the region below the respective crane is identical in form, dimension and relative position. A structural engineer or naval architect recognises here that the vertical bulkheads that form parts of the support structure beneath each crane, start at the top of the platform and extend directly down into the construction of the column itself. In the field of ship building, it is well known that the structural integrity between the bulkheads of the hulls and/or columns of this type of vessel is obtained by welding, the seams or butts between the welded parts providing for a secure junction and forming a continuous path for the transmission of forces. In particular, the person skilled in the art would immediately recognise that the vertical bulkheads extending down into the column are fixedly secured in this manner to the sidewall portions of the column.

It follows from the above considerations that a support structure extending downwardly from the crane, through the platform to the column beneath the crane, and down into said column, whereby the structure is fixedly secured to sidewall portions of said column to provide a continuous path transmitting the forces created by operation of said crane to said column, as defined in the characterising clause of granted claim 1, is anticipated by D2.

The argument of the appellant that the support structure of the invention concentrates the transmission of force from the crane into a single column by directly coupling the crane to that column is not convincing because the wording of the claim does not exclude that forces are also transmitted to the rest of the vessel's structure. Furthermore, to interpret the claim in such a limited manner would be inconsistent with the disclosure of the patent specification. Figures 7A to 7E of the contested patent show that the longitudinal and lateral bulkheads 14,16 participate in absorbing load stresses from the crane. Since these bulkheads extend in both direction along the length or width of the platform 10, they also distribute forces from the crane to the platform 10.

The subject-matter of claim 1 of the main request is therefore not novel.

3. *Auxiliary request*

Claim 1 of the auxiliary request consists of the combination of claim 1 as granted with dependent claim 8 as granted, the latter specifying that the

platform forms a buoyant body to provide the vessel with reserve buoyancy.

In the determination of the freeboard of passenger and cargo ships, one of the principal considerations imposed by regulations is the degree to which a vessel is subdivided into compartments by means of watertight bulkheads and decks. In this context, the term "reserve buoyancy" is known in the art and corresponds to the volume or potential buoyancy of the watertight structure of a vessel above the load line.

Given that the platform of the vessel of D2 is divided into compartments by means of bulkheads it is obvious for safety reasons to construct at least some of these compartments in a watertight manner so as to provide reserve buoyancy which would come into effect if the vessel were for example to partially capsize. In this respect, it is pointed out that in the type of semi-submersible vessel involved the platform is the only element in which the required reserve buoyancy can be feasibly provided.

The subject-matter of claim 1 of the auxiliary request does therefore not involve an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

A. Vottner

S. Crane