

PATENT SPECIFICATION (11)

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(54) CRANE SYSTEM

(71) We, HOWALDTSWERKE-DEUTSCHE WERFT AKTIENGESELLSCHAFT HAMBURG und KIEL, of Schwentinestrasse, 23 Kie! 14, Federal Republic of Germany, a Joint-Stock Company organised under the laws of the Federal Republic of Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a crane system with a pivotally mounted main jib converted for working with a pivotally mounted auxiliary jib.

In known floating cranes of such type, tip extensions are used in order to increase the radius and the lifting height of the jib. These tip extensions are mounted pivotably on laterally protruding journals at the head of the main jib. In the case of the tip extensions approximately 20m long hitherto customary, the crane is automatically capable of receiving the tip extension from the horizontal position. In the case of longer tip extensions, outside assistance is necessary to pick them up owing to their higher dead weight.

For the erection of particular structures, for example offshore units, great lifting heights and payloads are required. These requirements can no longer be fulfilled economically with the hitherto customary jib extensions when mounted at the head of the main jib. The traction cables required on the neck winch in order to erect such systems are very much stronger than the traction cables of the work loads. Furthermore, to this there would be added a larger structural weight of the main jib in order to absorb the higher stresses.

The present invention consists in a crane system with a pivotally mounted main jib converted for working with a pivotally mounted auxiliary jib, characterised in that the pivot axis of the auxiliary jib is located in proximity of or in the pivot axis of the main jib, and

the main jib is included in the converted crane system in that a compression strut and cables fastened to the auxiliary jib meet at the main jib head.

Advantageously, the main jib is used as erector for the auxiliary jib. Due to the favourable lever ratios for a neck traction of the main jib, the traction cable which is required to erect the system is no stronger than for the working load. This constitutes a considerable economic factor.

In order that the invention may be more readily understood, reference is made to the accompanying drawings which illustrate diagrammatically and by way of example one embodiment thereof, and in which:—

Figure 1 shows a known floating crane in side elevation,

Figure 2 shows a crane system in accordance with the invention comprising an auxiliary jib attached to the main jib in side elevation, and

Figure 3 shows the erected auxiliary jib in side elevation. Referring to Figure 1 of the drawings, the known floating crane 8 has a main jib 3 and a neck traction 4 with winch 10. The main jib 3 has a head 1 and a pivot axis 2 by means of which it is attached to a pontoon of the floating crane 8.

The auxiliary jib comprises the jib sections 7 with head 9 and a compression strut 5, to the tip of which cables 6 are fastened which pass to the auxiliary jib sections via the head 9 and are secured to the sections.

The functional sequence for picking up the auxiliary jib is as follows:

The assembly of the auxiliary jib can be effected on land or on the pontoon. The auxiliary jib sections 7 are laid out, the cables 6 are fastened to the compression strut 5 and via the head 9 to the auxiliary jib sections 7. The floating crane 8 is brought into position, the auxiliary jib 7 is locked in the bearings provided, the compression strut 5 is erected with the cables 6 and attached to the main

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jib head 1. The erection of the jib system is effected by means of the winch 10 via the neck traction 4.

WHAT WE CLAIM IS:-

- 5 1. A crane system with a pivotally mounted main jib converted for working with a pivotally mounted auxiliary jib, characterised in that the pivot axis of the auxiliary jib is located in proximity of or in the pivot axis of the main
10 jib, and the main jib is included in the converted crane system in that a compression strut and cables fastened to the auxiliary jib meet at the main jib head.

2. A crane system according to claim 1,

wherein the main jib is used as erector for the auxiliary jib. 15

3. A crane system, substantially as herein described with reference to and as shown in Figures 2 and 3 of the accompanying drawings. 20

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