

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) Publication number:

0 408 111 A1

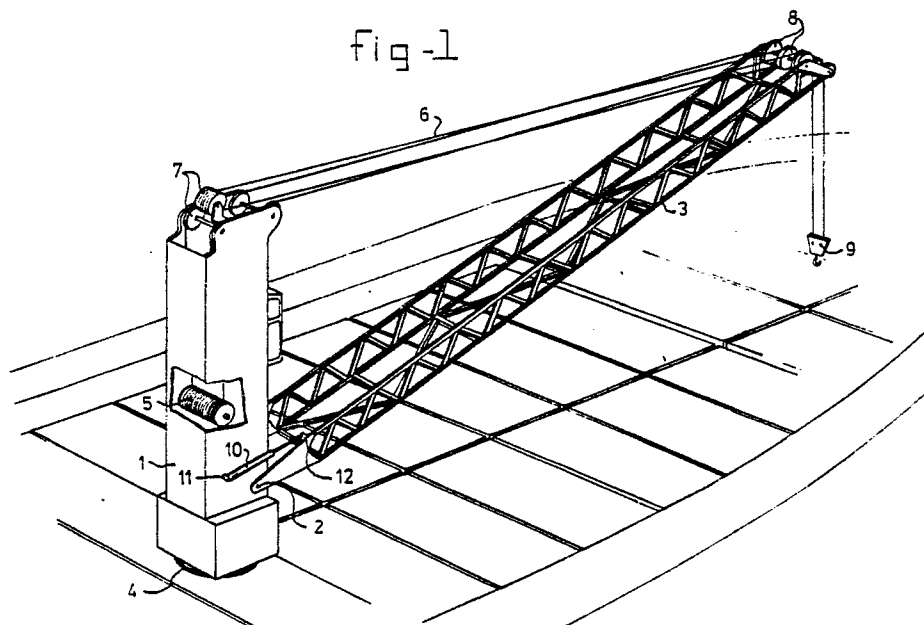
(12)

EUROPEAN PATENT APPLICATION(21) Application number: **90201769.8**(51) Int. Cl.⁵: **B66C 23/52**(22) Date of filing: **02.07.90**(30) Priority: **13.07.89 NL 8901815****NL-3044 AV Rotterdam(NL)**(43) Date of publication of application:
16.01.91 Bulletin 91/03(72) Inventor: **Roodenburg, Joop**
Donkerstraat 7a
NL-2611 TG Delft(NL)(84) Designated Contracting States:
AT DE ES FR GB IT NL SE(71) Applicant: **HUISMAN SPECIAL LIFTING**
EQUIPMENT B.V.
Linschotenstraat 35(74) Representative: **de Bruijn, Leendert C. et al**
Nederlandsch Octrooibureau
Scheveningseweg 82 P.O. Box 29720
NL-2502 LS 's-Gravenhage(NL)(54) **Hoisting crane.**

(57) A hoisting crane used on ships to load mixed cargo and containers into the holds and to unload them from the holds comprises a crane housing (1) which can be slewed on a rotary slewing ring (4), a jib (3) hingedly connected to the bottom part of said crane housing (1), luffing means in order to luff the jib (3) in and out, a hoisting drum (8) with drive motor fitted in or on the housing (1), and a hoisting cable (6) which is to be wound on or off the hoisting

drum (8) and which runs over guide means (7) at the top side of the crane housing (1) and guide means (8) at the free end of the jib (3). In order to enable the jib (3) in the fully luffed-in position to take a vertical position, the jib (3) is designed as a lattice which is U-shaped in cross section, and which accommodates a part of the crane housing (1) in the fully luffed-in position, while the luffing means comprise at least one tension cylinder (10).

fig -1

**EP 0 408 111 A1**

HOISTING CRANE.

The invention relates to a hoisting crane, comprising a crane housing which can be slewed on a rotary slewing ring, a jib hingedly connected to the bottom part of said crane housing, luffing means in order to luff the jib in and out, a hoisting drum with drive motor fitted in or on the housing, and a hoisting cable which is to be wound on or off the hoisting drum and which runs over guide means at the top side of the crane housing and guide means at the free end of the jib.

Such cranes (pedestal cranes) are commonly used on ships to load mixed cargo and containers into the holds and to unload them from the holds. The problem of known cranes of this type is that, when the jib is in the fully luffed-in position, a vertical position of the jib is impossible, because the presence of the crane housing prevents this. The hoisting apparatus suspended from the hoisting cable - usually a hoisting hook or spreader - will in this jib position therefore be at a horizontal distance which is not negligible relative to the crane housing, so that the mixed cargo cannot be placed directly below the crane housing in the holds of the ship. This leads to loss of hold space.

The object of the invention is to eliminate this disadvantage, and to this end the jib is designed as a lattice which is U-shaped in cross-section, and which accommodates a part of the crane housing in the fully luffed-in position, while the luffing means comprise at least one tension cylinder.

The invention will now be explained with reference to the figures, in which an example of an embodiment is shown.

Figure 1 shows a perspective view of the hoisting crane of which the jib is luffed out.

Figure 2 shows a perspective view of the same crane, but in this case with the jib fully luffed in.

Figure 3 shows a side view of the crane according to Figures 1 and 2 in which the jib is luffed in.

The pedestal crane shown comprises a crane housing 1 and a jib 3 hingedly connected thereto at 2.

The housing 1 contains a motor-driven winch drum 8 on which a part of a hoisting cable 6 is wound. This hoisting cable forms a tackle and runs over tackle blocks 7 at the top side of the housing 1 and tackle blocks 8 at the free end of the jib 3 to a hoist hook 9 or other hoisting apparatus.

Two hydraulic tension cylinders 10 are connected at 11 hingedly to the crane housing 1 and at 12 hingedly to the jib 3, in order to luff the jib in and out.

The jib 3 is constructed from a lattice and is U-shaped in cross-section.

As can be seen from Figures 2 and 3, in the fully luffed-in position of the jib a part of the crane housing falls within the U-shaped jib in the form of a lattice.

Apart from the U-shape of the jib, the design of the luffing means as tension cylinders 10 (instead of pressure cylinders) is also important for reaching of the vertical position of the jib in the fully luffed-in position thereof. The tension cylinders have a small rotary cylinder radius during the luffing in and out of the jib.

Figure 3 shows that the part of the hoisting cable 6 extending between the hoisting hook 9 and the tackle block 8 runs at a short distance from the housing, so that piece goods can be placed and lifted below the crane housing 1. In the case of cranes in which the jib stands at an angle in the fully luffed-in position, the above-mentioned part of the hoisting cable with hook thus lies relatively far from the crane housing, so that the cargo cannot be placed directly below the crane housing. A considerable gain in loading capacity is achieved by means of the invention.

Claims

1. Hoisting crane, comprising a crane housing which can be slewed on a rotary slewing ring, a jib hingedly connected to the bottom part of said crane housing, luffing means in order to luff the jib in and out, a hoisting drum with drive motor fitted in or on the housing, and a hoisting cable which is to be wound on or off the hoisting drum and which runs over guide means at the top side of the crane housing and guide means at the free end of the jib, characterized in that the jib is designed as a lattice which is U-shaped in cross-section, and which accommodates a part of the crane housing in the fully luffed-in position, and in that the luffing means comprise at least one tension cylinder.

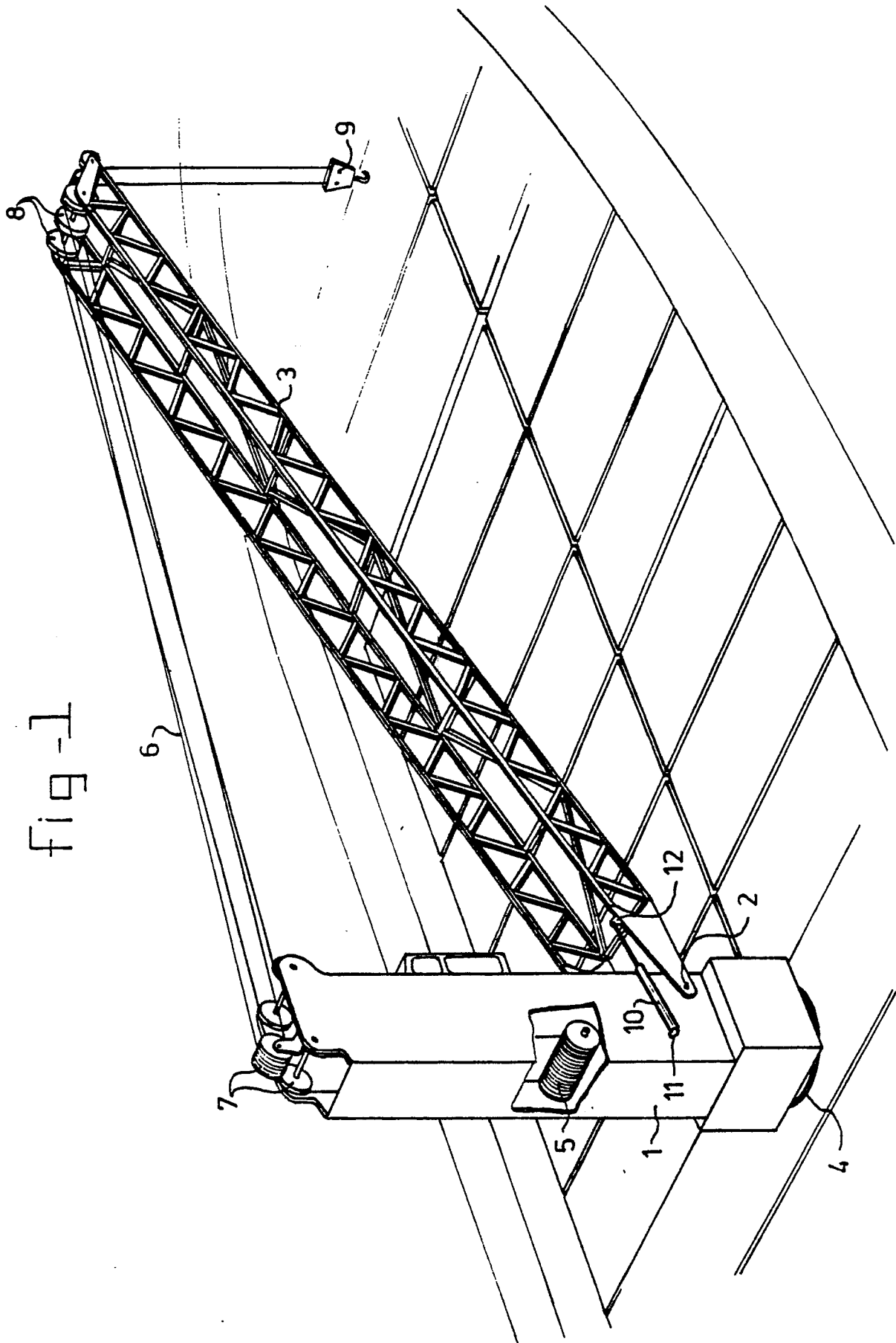


fig - 2

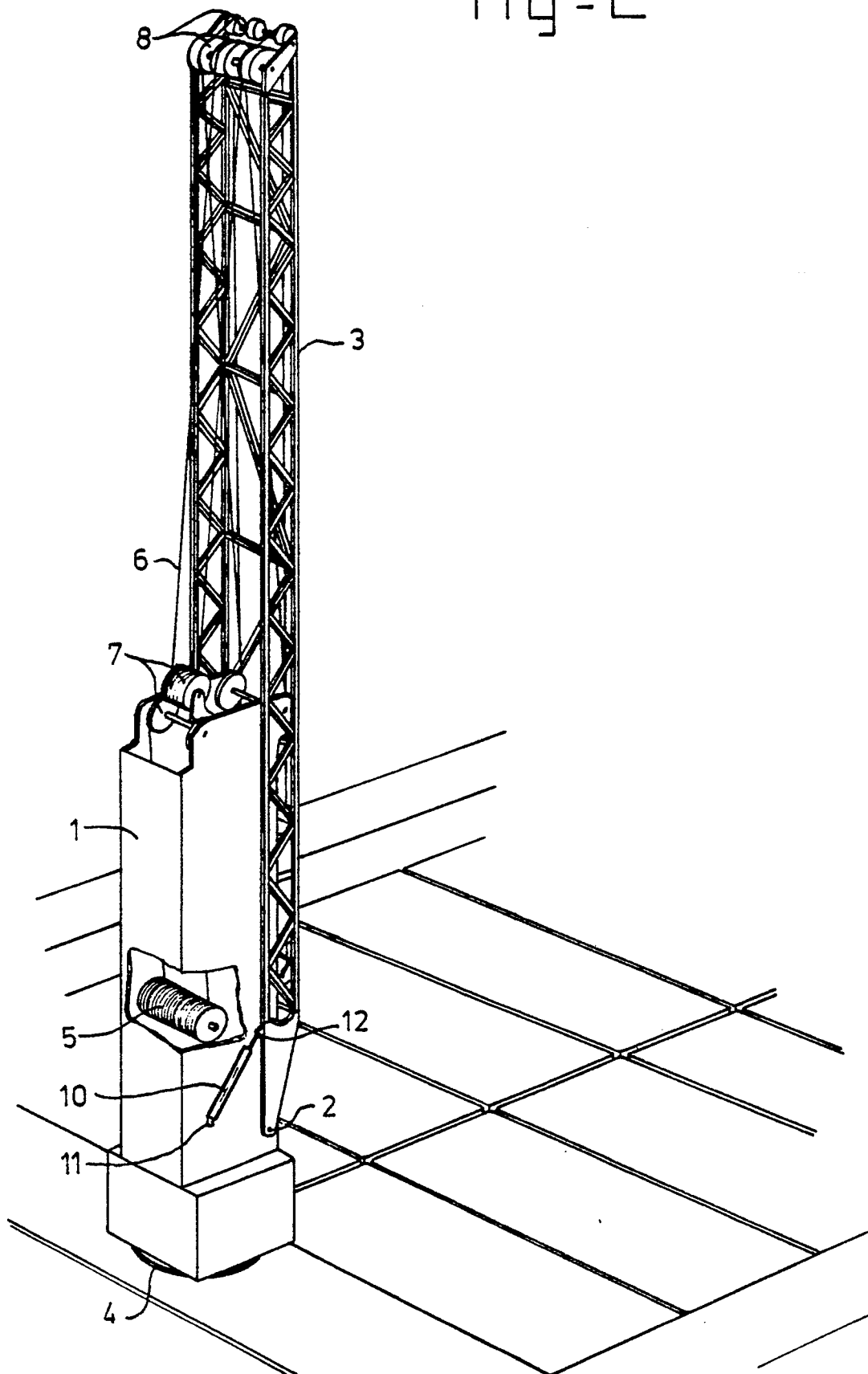
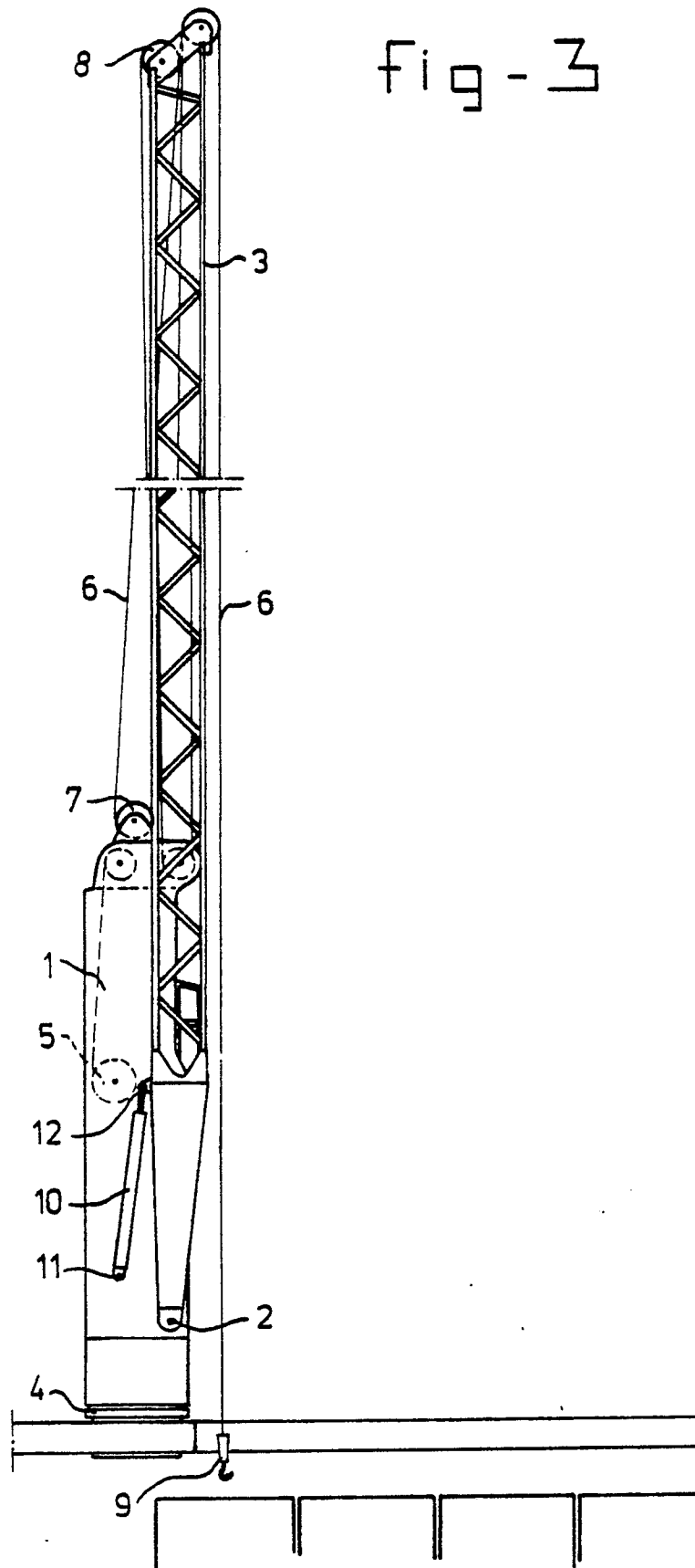


fig - 3





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 20 1769

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-3 051 324 (F. POHL) * Complete document *	1	B 66 C 23/52
A	DE-A-2 637 682 (NEUENFELDER MASCHINENFABRIK) * Page 7, lines 1-24 *	1	
A	DE-C- 877 419 (DENAG)		
A	DE-A-3 315 888 (LIEBHERR-WERK)		
A	GB-A-2 111 458 (GRAY MACKENZIE TECHNICAL SERVICES)		
A	DE-A-3 438 627 (ORENSTEIN & KOPPEL)		
A	DE-B-1 126 095 (FRIEDRICH KOCKS)		
A	FR-A- 529 290 (JARDINE)		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B 66 C B 63 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 06-09-1990	Examiner VAN DEN BERGHE E.J.J.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	