

12 **EUROPEAN PATENT APPLICATION**

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84 Designated Contracting States: **BE DE FR GB IT NL SE**

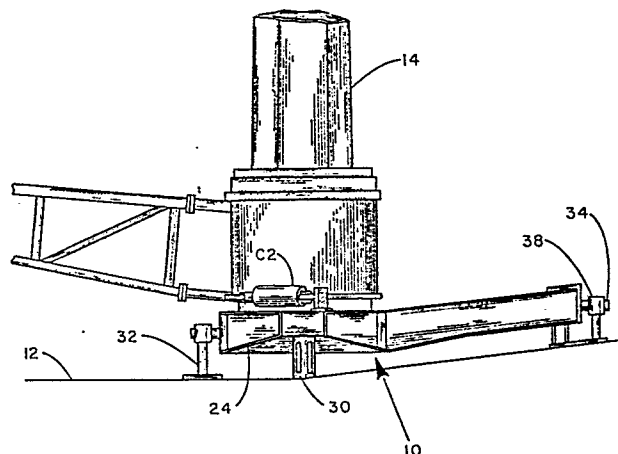
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report: **15.05.85 Bulletin 85/20**

54 **Sail support and control system.**

57 This invention provides an improved system for causing swinging of a boom of a sail support system as described in the above identified application, in which the boom support, which is rotatable about the mast or mast support is driven in rotation by hydraulic or pneumatic cylinders suitably arranged to rotate the boom about 90° to either side of the fore and aft position. In one embodiment of the invention two cylinders are symmetrically positioned in relation to the boom support so as to enable rotation of the boom 90° to port or starboard without interference of the cylinder rods with the boom support, and so that the rotating force that can be applied to the boom support is never less than the force that is available from one cylinder acting at the maximum radius. Means is also provided to prevent the boom from swinging at an excessive rate, such as when it is being swung out to catch the wind, by controlling the flow of fluid out of the cylinders. Means is also provided for holding the boom in a desired position.

In a preferred embodiment of the invention, the boom support and the cylinders are mounted on a support frame on an upper deck of the ship, with means being provided for measuring the force applied by the frame to the ship. Since the cylinders act between the support frame and the boom support, the forces applied by the cylinders are isolated from the propulsion force measuring device.





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. 3)
Y	PATENTS ABSTRACTS OF JAPAN, vol. 7, no. 50 (M197) (1195) 26 February 1983 & JP - A - 57 198194 (KEISUKE KOMANO) (4-12-1982) * the entire document * --	1,2	B 63 H 9/10 B 63 B 15/00
Y	AU - B - 474 863 (RAYDON AYERS LINES) * the entire document * --	1,2	
D,A	EP - A - 0 073 358 (BARDEHLE) * abstract; claims 2,3; figures 1,3 *	1	
A	FR - A - 2 304 801 (MASSEY FERGUSON) * pages 3,4,10,11; figures 1,3* --	4	
A	DE - B - 1 175 572 (BREDEMEIER) * the entire document * -----	1,2	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 14-08-1984	Examiner OFFMANN
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			



CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

☒ LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-4: Swinging of a boom to a desired angle by means of a boom support actuated by fluid cylinders.
2. Claims 5-9: Mounting structure for measuring the force of wind.

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims: 1-4



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Category	Citation of document with indication where appropriate, of relevant passages	Relevance to claim	
A	* Pages 3,4,10,11; figures 1,3 * --	4	
	DE - B - 1 175 572 (BREDEMEIER) * The whole document * -----	1,2	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 3)