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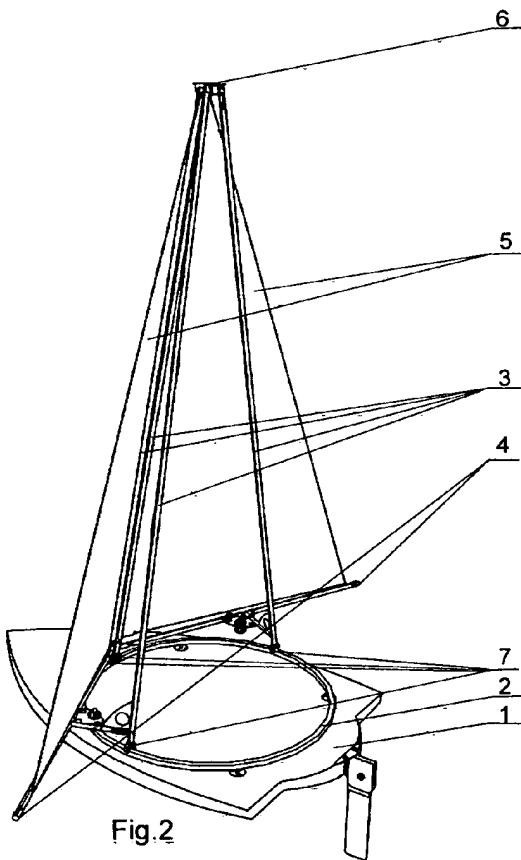
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### (54) Sailing gear, especially for floating crafts

(57) The subject of the invention is a sailing gear, especially for floating craft. Upon a ring shaped element (2), fastened on the upper part of the craft hull (1) there are two carriages (7) movable on the ring element (2), and to said carriages are fastened two sets of sailing gear, each set having a mast (3), a boom (4) and a sail (5) asymmetrical in relation to its vertical axis. The top parts of both sail sets are connected to one another, by means of a link member (6), which enables pivot movement of said sail sets in relation to one another. Maneuvering of the sails in relation to the wind direction is carried out by moving carriers (7) together or separately thus setting the sail sets in relation to the wind and the craft direction.



## Description

**[0001]** The subject of this invention is sailing gear, especially for floating crafts.

**[0002]** There is known from Polish patent application No PL 174924 B 1 a sailing gear for a sailing craft consisting of ring element mounted movably onto guide ways fixed to a hull of the craft, at least one mast, fastened to said ring element, a sail spread upon said mast, said sail being symmetrical in relation to its vertical axis. Such sailing gear must inherently having sailing symmetrical in relation its vertical axis, which is less effective aerodynamically in comparison with sailings asymmetrical in relation to its vertical axis. Besides, the symmetrical sail mounted symmetrically upon the said ring element mounted movably on said guide ways, does not prevent against the capsizing of the craft.

**[0003]** There is also known from European patent application No EP 0319591 A1 a sailing boat equipped with guide way of ring form fixed to the hull, upon which there is movably mounted a set of masts with related backstays over which there is a sail spread. Said sail is being equipped with a movable boom adapted to regulate the sail surface. The sailing gear according to said invention is being composed of three symmetrical relating to their vertical axis component sails, in which the forward edge of the sail at one wind direction become rear edge of the sail at opposite wind direction. A sail symmetrical relating to its vertical axis is aerodynamically less effective in comparison of asymmetrical sails and component sails, when co-operating with each other are exposed to under air flow which impairs their thrust force.

**[0004]** The aim of this invention is the design of sailing gear, especially for floating crafts, enabling easy and safe maneuvering of sails, with use of less force and obtaining more effective aerodynamically sailing gear.

**[0005]** The sailing gear according to this invention consists of two of sail sets, which are at their lower parts fastened to connecting members movably mounted upon the ring shape guide ways, fixed upon the craft hull and at their top parts connected together by means of a link gear enabling pivotal movement of both sets in relation to one another.

**[0006]** In construction of this invention, the maneuvering of the sails in order to set them preferably at the wind direction consists of moving the two connecting members of the sail sets on the ring shaped guide way either jointly or separately.

**[0007]** The sailing gear according to this invention enables at the courses on the wind to set the booms of the sails in parallel to each other, at the distance which reduces blowing into rear sail by the fore sail, which facilitates sailing on the wind. Simultaneously, manipulating the sails low above the craft board obstructs the pressure equalization between the windward and leeward of the sail, which favorably influences the aerodynamic effectiveness of the sail gear. At the courses down wind, the sail gear according to this invention enables setting

the sail sets with masts touching each other, thus creating one sailing surface which makes it possible very effective use of the wind force. Also, the present invention eliminates the unsafe for the craft staff maneuvering of the boom sails over the cockpit during the tack handling. The sailing gear according to this invention has very low centre of the sail which diminishes the forces of tilting the craft when strong blowing.

**[0008]** The subject of this invention is illustrated in examples of embodiments on the accompanied drawings in perspective projection on which Fig 1 shows the craft with sailing gear according to this invention in an embodiment with four masts and with triangle sails, set in the course on the wind, Fig 2 shows the same craft with sails set in the course down the wind, Fig 3 shows another embodiment of the sailing gear according to this invention with four masts and rectangular sails set in the course on the wind, Fig 4 shows the sailing gear from Fig 3, with the sails set in the course down the wind, Fig 5 shows the sailing gear according to this invention in embodiment with two masts and triangle sails set in the course on the wind, Fig 6 shows the craft from the Fig 5 with the sails set in the course down the wind, and Fig 7 illustrates schematically the different settings of the sails according to this invention in embodiment with two masts and triangle sails in relation to the direction of the wind.

**[0009]** Sailing gear according to this invention consists of two sail sets, each having at least one mast 3, boom 4 and a sail 5, asymmetrical in relation to its vertical axis. Both sail sets are, at their top parts, connected together by a link member 6 enabling pivotal movement of these sail sets in relation to each other, and at their lower parts both sets are fastened to the carriages 7 which are movable upon of the guide way 2 in the form of a ring, mounted on the upper side of the craft hull 1. Embodiments shown on Fig 1 and 2 have four masts with sails in triangle form, asymmetrical in relation to their vertical axis while those shown on Fig 3 and 4 with sails in rectangular form, also asymmetrical in relation to their vertical axis. Fig 7 illustrates the best settings of the sailing gear according to this invention, while moving in different directions in relation to the wind, with triangle sails, viewing from the above. The picture proves the effectiveness of this solution, in courses down the wind, when both sets form one great surface, while, in the courses on the wind, the setting of both sail sets is such that their booms are parallel to each other which prevents perturbations of the work of the rear sail by the fore sail, which makes it possible the optimal use of the wind force. It also can be seen from the drawings that the booms 4 all the time are located outside the cockpit which safeguard the craft staff against dangerous contusions and facilitates the work on the board.

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## Claims

1. What I claim as my invention is: a sailing gear espe-

cially for a floating craft, having a hull, with a guide way in the form of a ring, fastened to said hull in its upper part, and at least two sets of sails with masts fixed to carriages movable upon said guide way, and booms fixed to said masts with sails spread upon the masts and booms **characterized by** the fact that these sail set masts (3) with booms (4) and sails (5) are connected at their top parts by means of link member (6) which enables a pivot movement of said sail sets in relation to each other.

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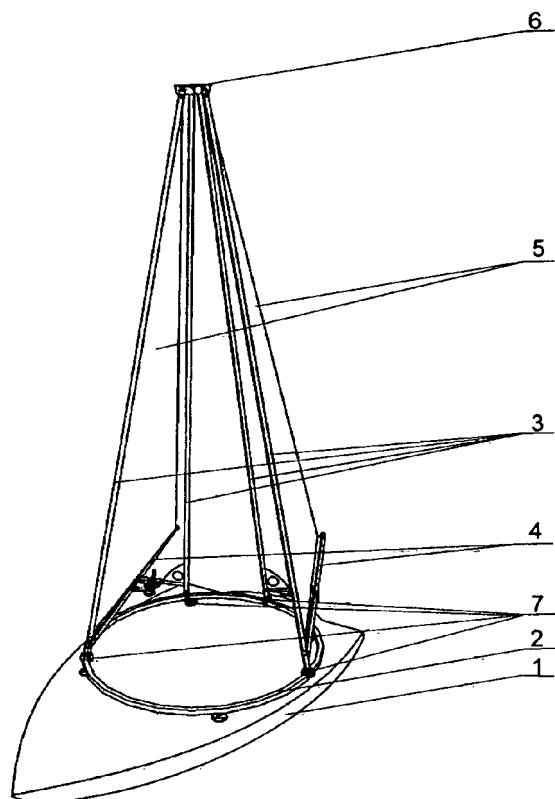


Fig.1

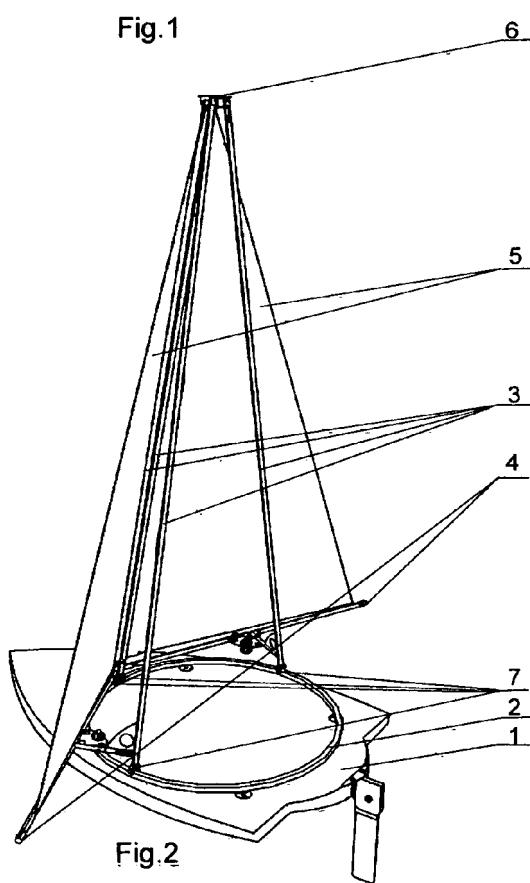


Fig.2

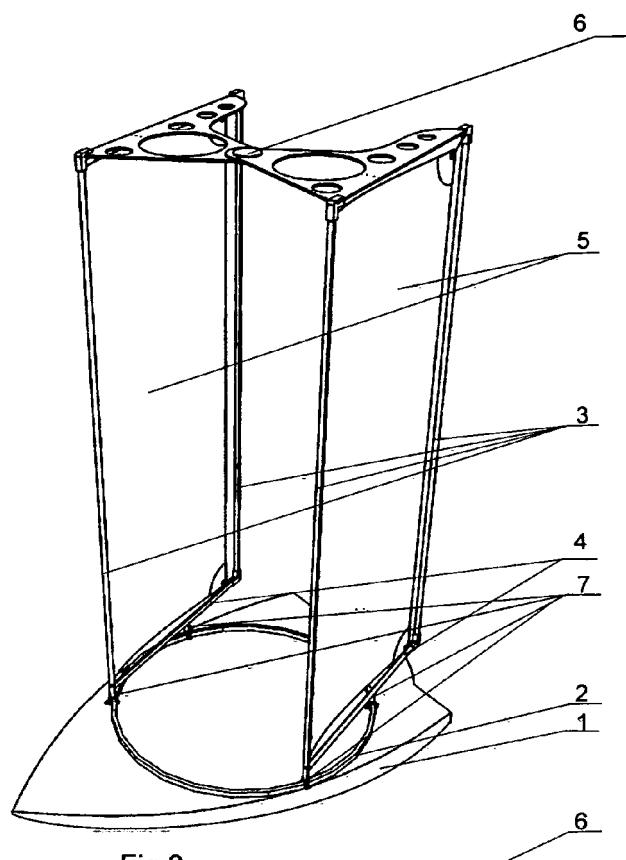


Fig.3

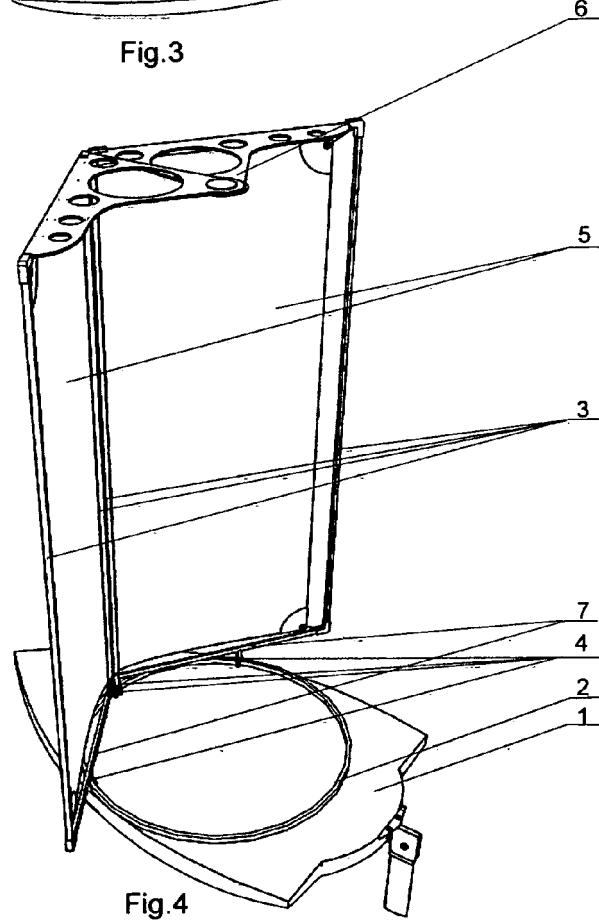


Fig.4

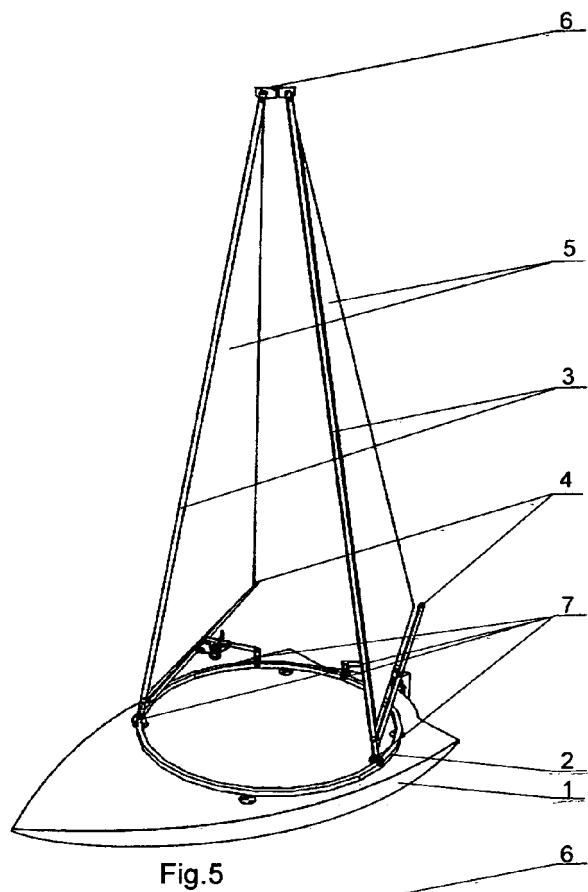


Fig. 5

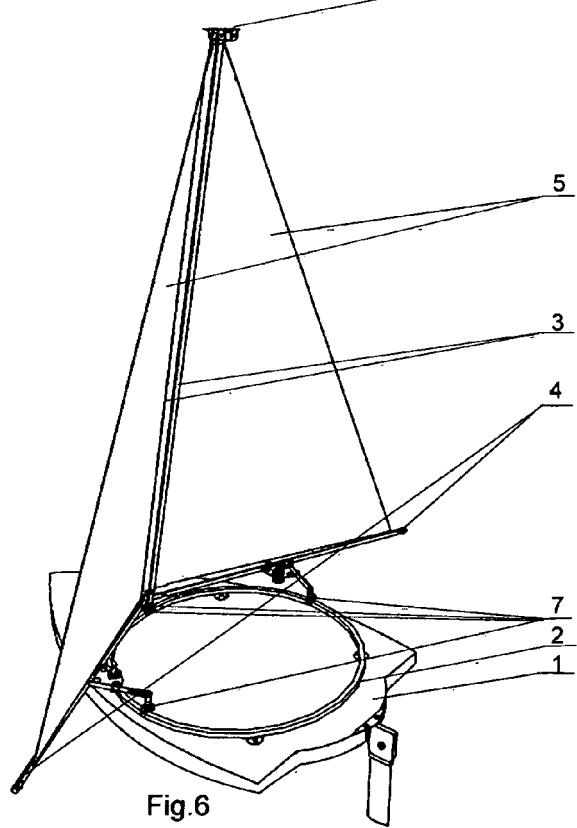


Fig. 6

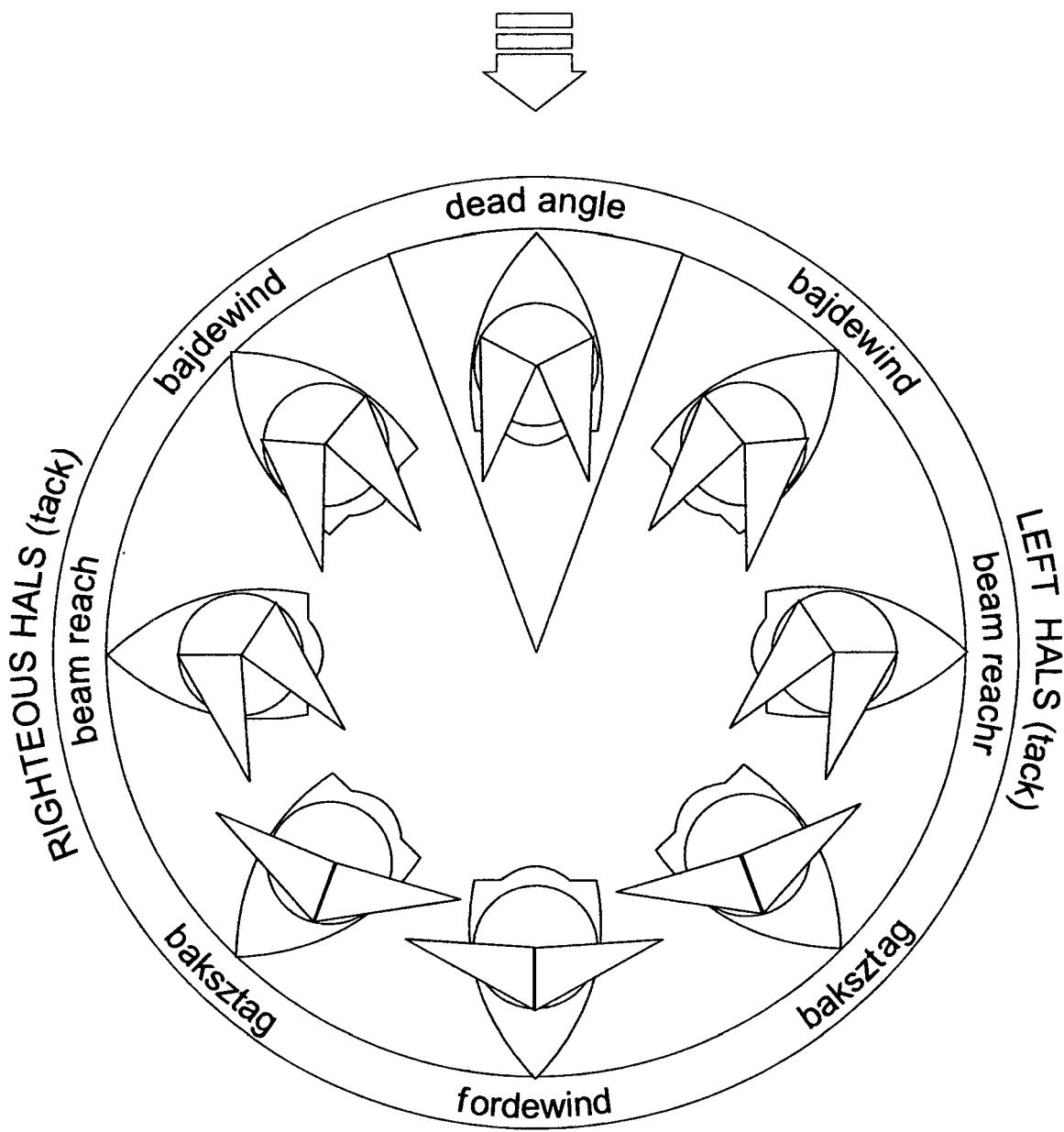


Fig.7



## EUROPEAN SEARCH REPORT

Application Number  
EP 11 46 0005

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	US 7 637 221 B1 (SINDEN FRANK W [US]) 29 December 2009 (2009-12-29) * paragraphs [0004] - [0008]; figures 1-11 * -----	1	INV. B63H9/06
X	US 2002/139285 A1 (WARD DENNIS HAROLD [GB]) 3 October 2002 (2002-10-03) * paragraph [0003] - paragraph [0037]; figures 1-4 *	1	
X	EP 0 319 591 A1 (HORY Y) 14 June 1989 (1989-06-14) * pages 4-8; figures 1-5 *	1	
A	US 5 816 180 A (HOYT JOHN GARRISON [US]) 6 October 1998 (1998-10-06) * columns 1-3; figure 1 *	1	
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The present search report has been drawn up for all claims			
1	Place of search Munich	Date of completion of the search 11 October 2011	Examiner Raffaelli, Leonardo
<b>CATEGORY OF CITED DOCUMENTS</b> <p>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</p> <p>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  &amp; : member of the same patent family, corresponding document</p>			

ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.

EP 11 46 0005

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**REFERENCES CITED IN THE DESCRIPTION**

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- EP 0319591 A1 [0003]