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(54) DYNAMIC RUDDER WHICH IS USED TO STEER VESSELS

(57) A dynamic rudder applicable for controlling ships, which consists of incorporating a cylinder on the lower part of the longitudinally situated keel or board, provided with two deposits on its ends, filled with water up to 50%, and which, by means of a pump, the water is moved from one to the other, having a horizontal shaft perpendicular to the longitudinal, shaft of the ship and parallel to the plane of the water.

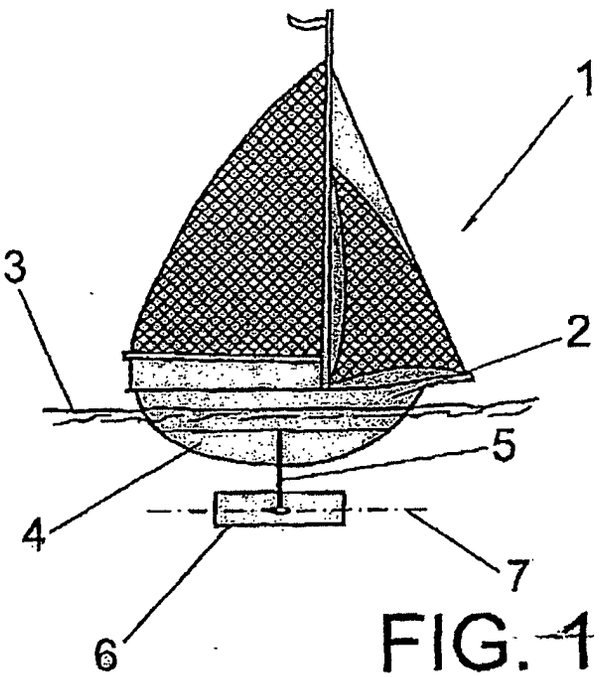

FIG. 1

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Description

OBJECT OF THE INVENTION

[0001] The present specification refers to a Patent of Invention application corresponding to a dynamic rudder applicable for controlling ships, whose evident purpose rests on substituting the traditional rudder of a ship of any type with a dynamic device.

FIELD OF THE INVENTION

[0002] This invention has its application within the industry dedicated to manufacturing ships.

BACKGROUND OF THE INVENTION

[0003] The applicant does not know of the current existence of an invention which has features similar to those described in the present specification.

DESCRIPTION OF THE INVENTION

[0004] The dynamic rudder applicable for controlling ships proposed by the invention substitutes the traditional rudder by means of incorporating a dynamic device.

[0005] More specifically, the dynamic rudder applicable for controlling ships object of the invention is constituted by means of a submerged cylinder and connected to the hull, being located under the keel and suitably centered, having a shaft which is parallel to the longitudinal bow to stern shaft.

[0006] In the case of sailboats, the cylindrical device will be located beneath the board, substituting the fixed counterweight of these boats, it being necessary to indicate that in this type of boats, the rotation of the cylinder of the dynamic rudder could be carried out by an inner, electric engine or by means of propellers on the stern of the cylinder itself which will be actuated by the thrust of the boat due to the wind.

DESCRIPTION OF THE DRAWINGS

[0007] In order to complement the description being given and for the purpose of helping to better understand the features of the invention, a sheet of drawings accompanies the present specification as an integral part thereof, which, with an illustrative and non-limiting character, show the following:

Figure 1.- Shows a side elevational view of a sailboat which incorporates the object of the invention relating to a dynamic rudder applicable for controlling ships.

Figure 2.- Shows a front elevational view of the object shown in figure 1.

Figure 3.- Shows a cross-section view of the dynamic rudder.

PREFERRED EMBODIMENT OF THE INVENTION

[0008] In view of figures 1 and 2, it can be seen how in this embodiment in sailboats, the applicable dynamic rudder for controlling ships is constituted as from incorporating on the hull (2) of a sailboat (1), and specifically beneath the board (4) obviously submerged in water (3), a structural reinforcement (5) which holds a support body (6) inside of which the cylinder (8) is located, a cylinder which, due to the rotation thereof, acts like a dynamic rudder, it being necessary to indicate that the rotation of the cylinder can be carried out by means of an inner, electric engine or also by means of propellers on the stern of the cylinder (8) itself, which will be actuated by the thrust of the boat mobilized by the wind received in its cloth or sail.

[0009] Figure number 3 shows that the invention incorporates a submerged cylinder (11) and connected to the hull as shown in figures number 1 and 2, referenced with (5), but in the case of the conventional ship mobilized by an engine, this would be in a centered position beneath the keel and its shaft parallel to the longitudinal bow to stern shaft.

[0010] As in the previous case, the cylinder would be constantly revolving, it being necessary to indicated that in this graphic representation, the cylinder referenced with (11) has two hollow deposits (12) and (13) located in the front and rear areas, in other words on the bow and stern, 50% of which will fill up with water or another liquid derived from it.

[0011] The cylinder has a pump (14) intended for driving the liquid from one deposit to the other.

[0012] The cylinder joined to the keel of the ship by a fixed connection located in its center must be able to permit oscillating on a horizontal shaft (15) perpendicular to the longitudinal shaft (16) of the ship and parallel to the plane of the water.

[0013] For controlling the ship, both in the case of it being of sails or mobilized by an engine, the water deposited in the cylinder will be moved form one deposit to the other, and if they are both balanced, the dynamic rudder will permit a linear movement, but in the case of pumping a larger amount to the front deposit (12), the ship will turn starboard and port in the case of a larger amount being incorporated in the rear deposit (13).

[0014] Controlling the ship is performed only by means of this device, which can be connected to a wheel in the control bridge or to the apparently conventional rudder wheel in any type of ship.

[0015] This typology of controlling a ship consumes no energy for the lateral shift of the water due to the rudder blade in the turn.

Claims

1. A dynamic rudder applicable for controlling ships, of those intended to be incorporated on the lower part of the hull of a ship (1), **characterized in that** the dynamic rudder is incorporated on the lower part of the hull (2) of a sailboat (1), shaped like a cylindrical body (8) which is fixed to the lower part of the board (4) by means of its, fixing to the hull with a support element (5) which has support means (6) on its side area, or in the case of a ship actuated or mobilized by means of an engine, it is incorporated like a submerged cylinder (11) and connected to the hull located beneath the keel, centered and with its shaft (15) parallel to the longitudinal bow to stern shaft, the cylinder (8) constantly revolving, having deposits (12) and (13) inside located on the bow and stern, respectively, the hollow deposits (12) and (13) being filled to 50% with water or another liquid derived from it, the cylinder (8) or (11) having a pump (15) inside for driving the liquid contained in one deposit to the other, and vice versa.

2. A dynamic rudder applicable for controlling ships according to claim 1, **characterized in that** the cylinder joined to the keel or to the hull of the ship by means of a fixed connection located in its center oscillates on a horizontal shaft perpendicular to the longitudinal shaft of the ship parallel to the plane of the water.

3. A dynamic rudder applicable for controlling ships according to claim 1, **characterized in that** controlling of the ship is carried out by means of the connection of the rudder to a wheel located in the bridge or to an apparently conventional rudder wheel.

4. A dynamic rudder applicable for controlling ships according to claim 1, **characterized in that** the rotation of the cylinder of the dynamic rudder can be carried out by means of an inner electric engine or by means of propellers assembled on the stern of the cylinder (8), which will be actuated by the thrust of the boat due to the wind.

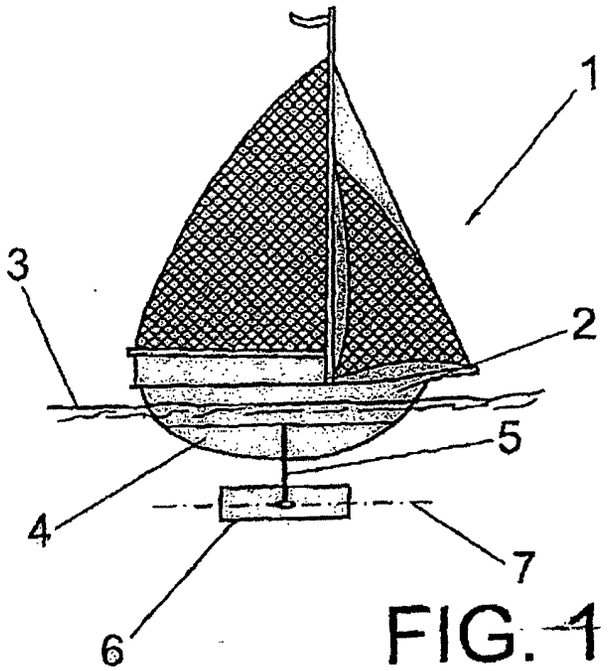

FIG. 1

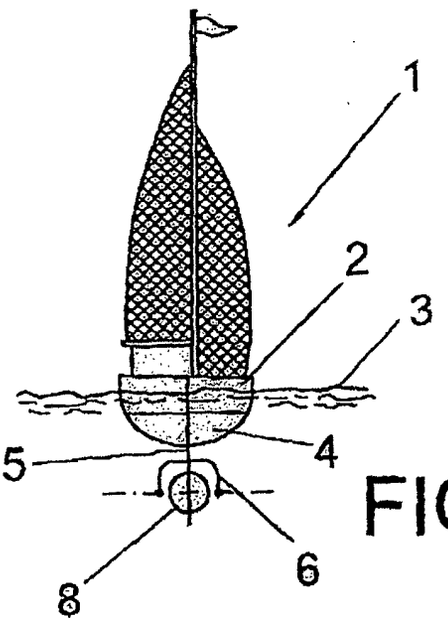

FIG. 2

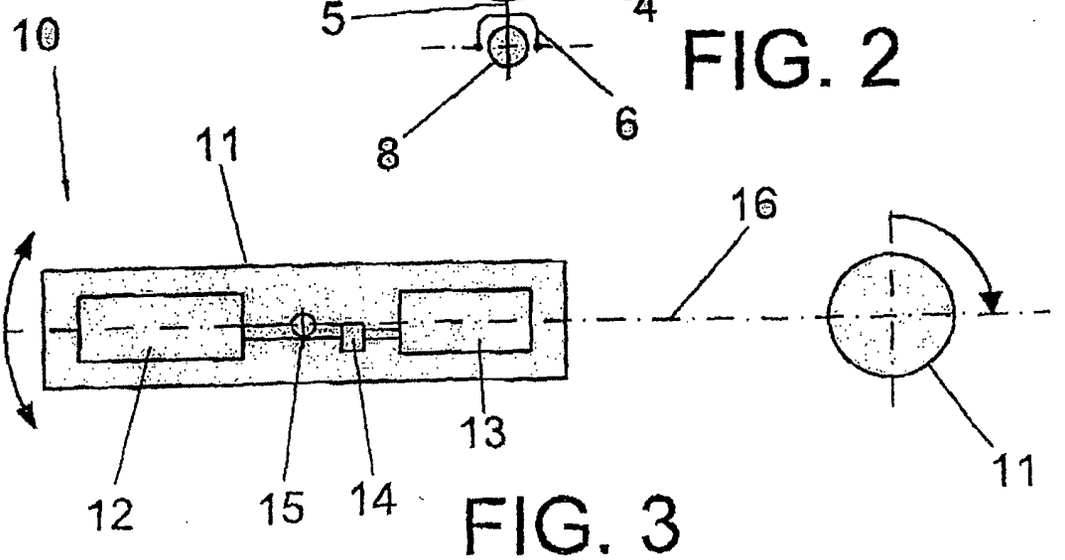

FIG. 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 02/00569

A. CLASSIFICATION OF SUBJECT MATTER

IPC[7] B63H 25/52

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC[7] B63H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CIBEPAT, EPODOC,WPI, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 275146 C (HERTEL et al.) 10.06.1914. **See the whole document.**	1, 2
A	DE 264456 C (PAUL) 26.09.1913. **See the whole document.**	1, 2
A	DE 272894 C (PAUL) 11.04.1914. **See the whole document.**	1
A	WO 0108969 A1 (SCHAER) 08.02.2001.Page 8, lines 1-13;figures 3,4.	1,2
A	DE 212368 C (SIEMENS-SCHUCKERT) 30.07.1909.	
A	DE 289448 C (PAUL) 23.12.1915.	
A	US 3576134 A (FERSHT) 27.04.1971.	
A	FÖPPL, L. Dr. Ing. Mecánica de los sólidos invariables. En: Manual del Ingeniero; Academia Hütte de Berlín.Traducción de la edición 28 alemana. Barcelona: Gustavo Gili, 1985, Vol. 1, ISBN 84-252-0269-8; page 657, line 51- page 658, line 8; figures 81, 82.	

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
17 January 2003 (17.01.03)	**18 February 2003 (18.02.03)**
Name and mailing address of the ISA/ **SPTO**	Authorized officer
Facsimile No.	Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 02/00569

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 1392787 A (NICOLSON) 04.10.1921	

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/ES 02/00569

Patent document cited in search report	Publication date	Patent familiy member(s)	Publication date
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US 1392787 A	04.10.1921	NO TIENE	

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