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(54) VESSEL MAST TO WHICH A SAIL OR CLOTH CAN BE ATTACHED

(57) A vessel mast 101 has a tube 103 which can be secured with an open lower end 103A to a deck 201 of a vessel. In the tube 103 there are two cylinders 107 and 111 with movable pistons 109 and 113 therein to which piston rods 108 and 110 are attached, and to which piston rods sails are attached. The cylinders keep the sails taut and dampen forces due to gusts of wind on the sails. In the tube 103 is also a pressure cylinder 115 and a pressure piston 117 movable therein with a pressure piston rod 118 attached thereto, as well as a securing device 119 for securing the vessel mast 101 to the deck 201. The pressure piston rod 118 is coupled to a part of the securing device 119 to tighten the locking device without play.

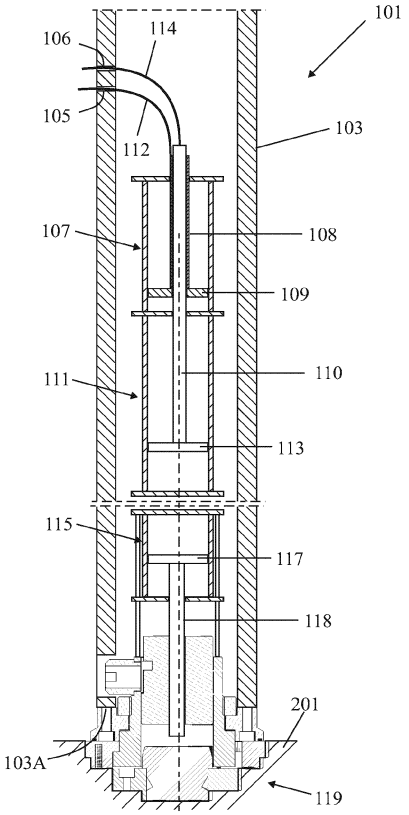

FIG. 1

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Description

Technical field of the invention

[0001] The invention relates to a vessel mast comprising a tube provided with a lower end, with which the tube can be secured to a deck of a vessel. A sail or cloth can be attached to the vessel mast to span part of the deck to create a shaded area.

Background of the invention

[0002] Such a vessel mast is generally known. The known vessel mast is provided with one or more fastening eyes to which one or more cords can be fastened, which are attached to a sail or cloth.

Summary of the invention

[0003] An object of the invention is to provide a vessel mast to which one or more sails or canvases can be attached in an advantageous manner. To this end, the vessel mast according to the invention is characterized in that it furthermore comprises a pneumatic cylinder and a piston with an associated piston rod being displaceable in the cylinder, the pneumatic cylinder and piston with the associated piston rod being in the tube and being secured to the tube, a cord is attached the piston rod which cord exits through a passageway in the tube and can be attached to a sail or cloth. By attaching the sail or cloth to a piston rod of a pneumatic cylinder, the sail or cloth can be pulled taut and kept taut by the cylinder and forces on the sail or cloth due to gusts through the cylinder can be damped, so that the risk of overloading the tube or the deck of the vessel is reduced.

[0004] In one embodiment of the vessel mast according to the invention, the pneumatic cylinder is part of a gas spring, preferably a gas pull spring.

[0005] In another embodiment, the pneumatic cylinder is connected to an air pump or compressed air container and the gas pressure in the cylinder is adjustable by means of control valves present between the air pump or compressed air container and the cylinder. Preferably, the gas pressure in the cylinder can furthermore be kept constant by a control unit connected to the control valves.

[0006] Preferably, the vessel mast comprises a further cylinder and a further piston with associated further piston rod movable therein, which further piston rod is attached a further cord, which exits via the passage or a further passage and can be attached to a further sail or a further cloth, or can be attached to the sail or cloth at another place.

[0007] In order to obtain an efficient and compact construction, the cylinder and the further cylinder are preferably arranged in line and the piston has a hollow piston rod through which the further piston rod of the further piston extends.

[0008] An embodiment of the vessel mast according to the invention is characterized in that it furthermore comprises a pressure cylinder with a pressure piston with associated pressure piston rod movable therein, which can be coupled with a securing device for securing the vessel mast to a deck in order to press or pull the securing device free from play.

[0009] Preferably, the pressure piston projects downwards from the lower end of the tube and the piston and further pistons project upwards from the cylinders. The pressure cylinder and the cylinder are preferably arranged in line.

Brief description of the drawings

[0010] The invention will be further elucidated below on the basis of an exemplary embodiment of the vessel mast according to the invention shown in the drawings, wherein:

Figure 1 shows the lower part of the vessel mast with the cylinders secured to the deck of a vessel in longitudinal section; and

Figure 2 shows a schematic representation of the lower part of the vessel mast with the valves, pump and control unit indicated therein.

Detailed description of the drawings

[0011] Figure 1 shows a longitudinal section of an embodiment of the vessel mast according to the invention. The vessel mast 101 has a tube 103 secured with an open lower end 103A in a deck 201 of a vessel and provided with passageways 105 and 106 for cords 112 and 114 attached to a sail or canvas. In the tube 103 there are two cylinders 107 and 111 in line one behind the other with movable pistons 109 and 113 therein with piston rods 108 and 110 attached thereto. Cords 112 and 114 are attached to the piston rods which lead to the outside via passages 105 and 106 and to which one or more sails or canvases can be attached. The piston cylinders keep the sail or canvas or sails or canvases taut and dampen forces due to gusts of wind on the sail or canvas or sails or canvases.

[0012] In the lower end 103A of the tube 103 there is also a pressure cylinder 115 and a pressure piston 117 movable therein with pressure piston rod 118 attached thereto, as well as a securing device 119 with which the vessel mast 101 is secured to the deck 201 of a vessel. The pressing cylinder 115 is attached to the locking device 119 and the pressing piston rod 118 extends downwardly and is coupled to a part of the locking device 119 to ensure that the locking device cannot be unintentionally disengaged.

[0013] The piston rod 108 is hollow and the piston rod 110 extends through the piston rod. The two pistons 109 and 113 extend upwards in the tube 103. The pressure cylinder 115 and the cylinders 107 and 111 are all in line. Between the pressure cylinder 115 and the cylinders 107

and 111 are valves for directing air to and from the pneumatic cylinders.

[0014] Figure 2 schematically shows the lower part of the vessel mast. Between the upper two cylinders 107 and 111 and the lower pressure cylinder 115 an air pump 121 is arranged which can change the gas pressure in the cylinders via control valves 123, 125 and 127. The gas pressure in the cylinders 107 and 111 can be kept constant by a control unit 129 connected to the control valves 123, 125 and 127, which is also connected to the air pump 121.

[0015] Although the invention has been elucidated in the foregoing with reference to the drawings, it should be noted that the invention is by no means limited to the embodiment shown in the drawings. The invention also extends to all embodiments deviating from the embodiment shown in the drawings within the framework defined by the claims. For example, the pneumatic cylinder or pneumatic cylinders for keeping the sail taut can also be designed as a gas spring.

Claims

1. A vessel mast (101) comprising a tube (103) provided with a lower end (103A) for securing the tube (103) to a deck (201) of a vessel, **characterized in that** the vessel mast (101) further comprising a pneumatic cylinder (107) and a piston (109) with an associated piston rod (108) being displaceable in the cylinder (107), the pneumatic cylinder (107) and (piston (109) with the associated piston rod (108) being in the tube (103) and being secured to the tube (103), a cord (112) is attached the piston rod (108) which cord (112) exits through a passageway (105) in the tube (103) and can be attached to a sail or cloth.

2. Vessel mast (101) according to claim 1, **characterized in that** the pneumatic cylinder (107) is part of a gas spring.

3. Vessel mast (101) according to claim 1, **characterized in that** the pneumatic cylinder (107) is connected to an air pump (121) or compressed air container and the gas pressure in the cylinder (107) is adjustable by means of control valves (123, 125, 127) between the air pump (121) or compressed air container and the cylinder (107).

4. Vessel mast (101) according to claim 3, **characterized in that** the gas pressure in the cylinder (107) can be maintained at a constant value by a control unit (129) connected to the control valves (123, 125, 127).

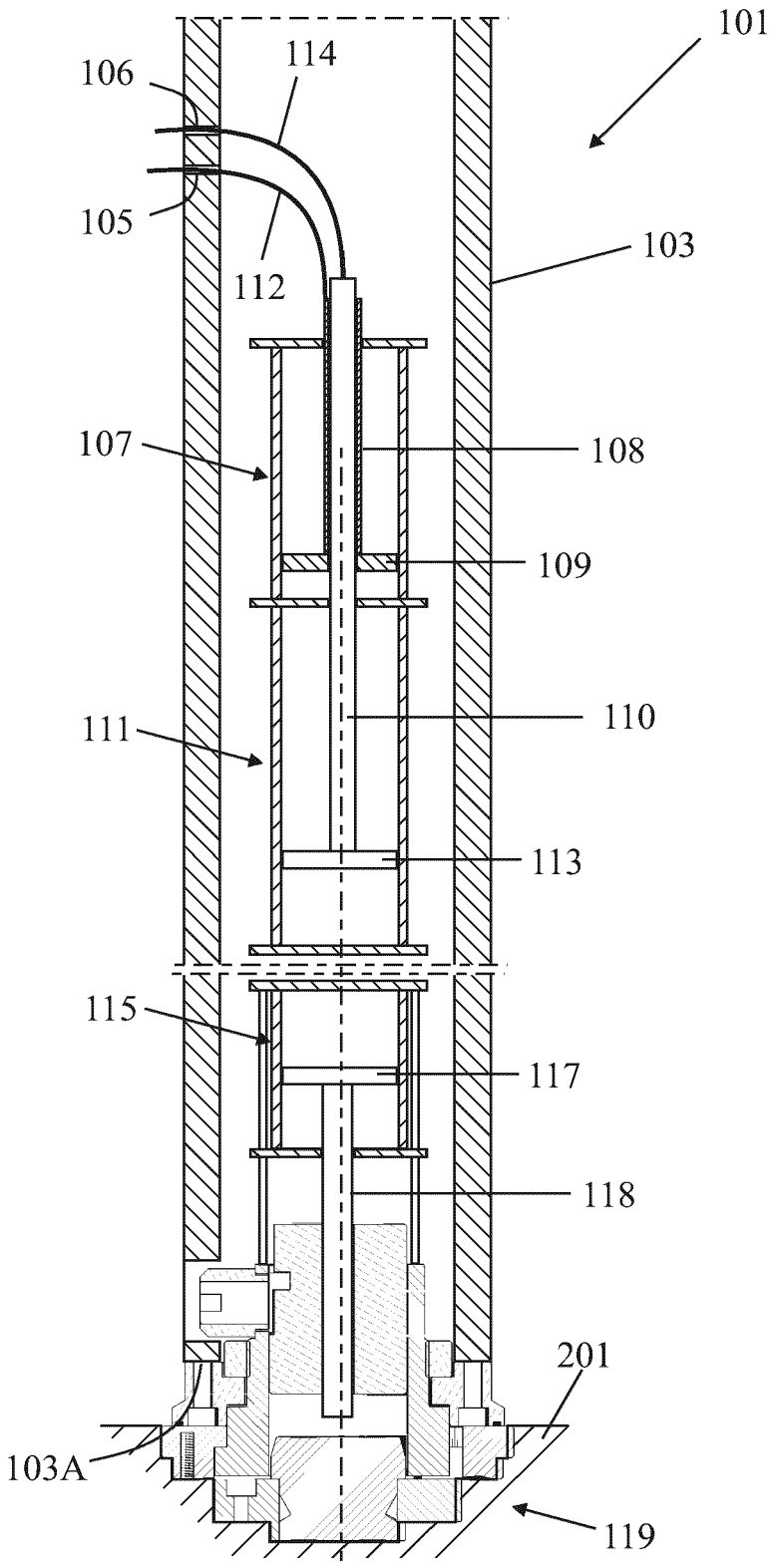
5. Vessel mast (101) according to claim 1, 2, 3 or 4, **characterized in that** it comprises a further cylinder (111) and a further piston (113) with an associated further piston rod (114) displaceable therein to which piston rod (114) a further cord is attached which exits through the passageway (105) or a further passageway (106) and can be attached to a further sail or cloth or otherwise secured to the sail or cloth.

6. Vessel mast (101) according to claim 5, **characterized in that** the cylinder (107) and the further cylinder (111) are arranged in line and the piston rod (108) is hollow and the further piston rod (110) extends through the hollow piston rod (108).

7. Vessel mast (101) according to any one of the preceding claims, **characterized in that** it furthermore comprises a pressure cylinder (115) and a pressure piston (117) with an associated pressure piston rod (118) displaceable therein, which can be coupled to a securing device (119) for securing the vessel mast (101) to a deck, to press or pull the securing device (119) such that there is no play.

8. Vessel mast (101) according to Claim 7, **characterized in that** the pressure piston rod (118) projects downwards from the lower end (103A) of the tube (103) and the piston rod (108) and further piston rod (110) protrude upwards from the cylinders (107, 111).

9. Vessel mast (101) according to Claim 7 or 8, **characterized in that** the pressure cylinder (115) and the cylinder (107) are arranged in line.


101
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103A
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FIG. 1

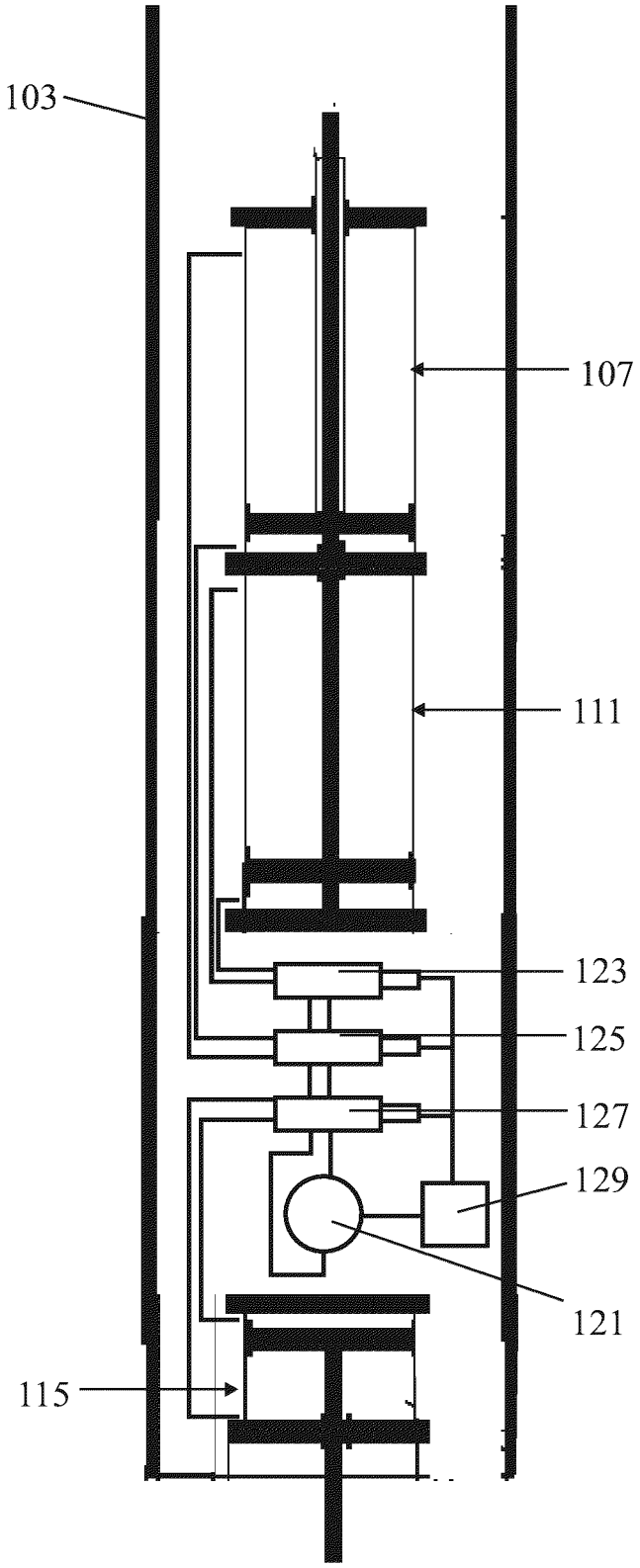

FIG. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 21 18 8972

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 496 046 A1 (GODFREY THOMAS [US]) 18 June 1982 (1982-06-18) * figure 4 * * page 12, line 11 - line 20 *	1,2	INV. B63B15/00 B25B25/00 B63B17/02 B66D1/00
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A	* page 2, line 24 - line 30; figures *	6	TECHNICAL FIELDS SEARCHED (IPC)
			B63B F16G B66F B25B F16P B66D

2 The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	10 January 2022	Balzer, Ralf

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
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E : earlier patent document, but published on, or after the filing date
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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10-01-2022

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82