L. T. GLASER.

DEVICE FOR INDICATING THE LIST OF VESSELS.

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1,183,638.

Patented May 16, 1916.

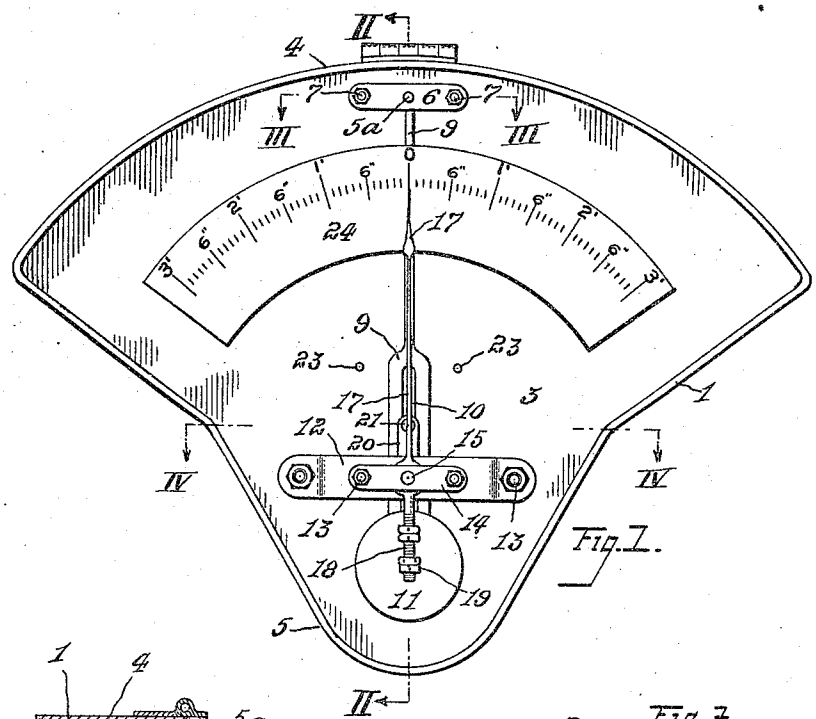


Fig. 1.

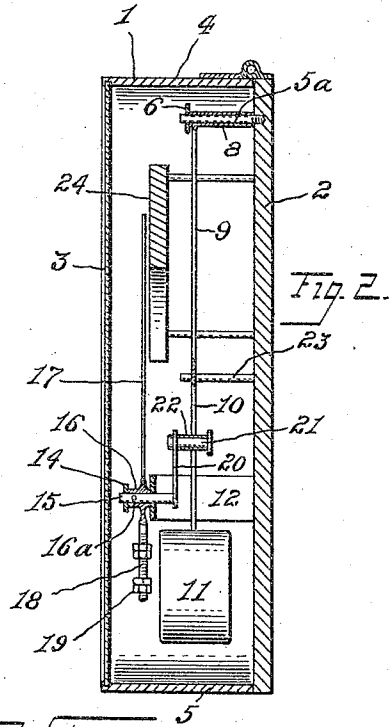


Fig. 2.

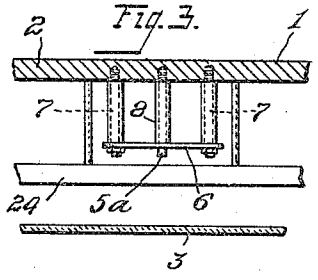


Fig. 3.

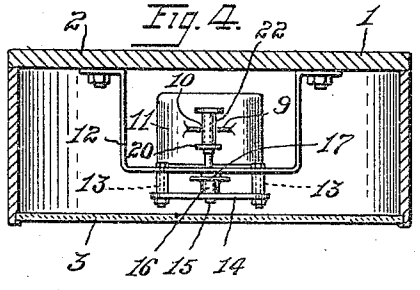


Fig. 4.

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UNITED STATES PATENT OFFICE.

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DEVICE FOR INDICATING THE LIST OF VESSELS.

1,183,638. Specification of Letters Patent. Patented May 16, 1916.

Application filed August 15, 1914. Serial No. 856,926.

To all whom it may concern:

Be it known that I, LEWIS T. GLASER, a citizen of the United States, resident of Cleveland, county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Devices for Indicating the List of Vessels, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to devices for indicating the list or trim of vessels while being loaded, whereby the cargo may be properly placed so as to put the vessel on an even keel.

The object of the invention is to provide a device of the above-described character which will be simple in construction and efficient in its operation.

The said invention consists of means hereinafter fully described and particularly set forth in the claim.

The annexed drawing and the following description set forth in detail certain means embodying my invention, the disclosed means, however, constituting but one of various mechanical forms in which the principle of the invention may be applied.

In said annexed drawing:—Figure 1 represents a front elevation of a device embodying my invention. Fig. 2 represents a vertical section taken upon the plane indicated by line II—II, in Fig. 1, and viewed in the direction indicated by the arrows, parts, however, cut by the plane of section being shown in elevation. Fig. 3 represents a detail horizontal section of a fragmentary portion of a device taken upon the plane indicated by line III—III in Fig. 1 and viewed in the direction indicated by the arrows. Fig. 4 represents a horizontal section taken upon the plane indicated by line IV—IV, Fig. 1, and viewed in the direction indicated by the arrows.

The illustrated embodiment of my invention comprises the casing 1 consisting of a back-member 2, a front-member 3 of glass, the top 4 and the bottom 5. Secured to the back 2, at the top thereof and located in the interior of the casing, is a fixed pin 5^a, the front end of which is supported by means of a plate 6 which itself is supported by two laterally placed pins 7, 7, see Fig. 3, the inner ends of these pins being suitably secured to the back 2. Upon this pin 5^a is mounted a sleeve 8 to the under surface of which is secured the upper end of a pendulum 9. The lower portion of this pendulum is enlarged and formed with a vertical slot 10 having parallel sides, as shown in Fig. 1, a weight 11 being attached to the lower portion of this enlarged or slotted part.

In a plane above the weight 11, intersecting the slotted portion of the pendulum and secured to the inside of the back member 2, is a U-shaped frame 12 to which are secured two pins 13, 13, carrying a horizontal plate 14. The said frame and plate 14 form a bearing for a horizontal pintle 15 on which is fixed a sleeve 16 by means of a pin 16^a passing through it and said pintle, to which is secured an upwardly extending pointer 17. Secured to the bottom of the sleeve 16 and extending in alinement with pointer 17 is a threaded portion 18 upon which may be mounted a plurality of nuts 19 which act as weights for the pointer. The pin 15 extends rearwardly beyond the front member of the frame 12 and has secured thereto an upwardly extending arm 20. To the upper end of this arm is secured a pin 21 upon which is rotatably mounted an anti-friction sleeve 22. This sleeve extends into the slot 10 of the pendulum and together with the arm 20 and pin 21 forms a crank for operating the pintle 15 and hence the pointer 17. The diameter of the sleeve is somewhat less than the width of the slot 10 so that it may slide readily therein and roll against the sides thereof, as will be readily understood. Two fixed studs 23, 23, Figs. 1 and 2, are fixed to the back member 2 and extend upwardly a distance such that they may act as stops for limiting the oscillation of the pendulum.

The above described device is fixed to a suitable part of the center of the ship and when the latter is up on an even keel, the pointer 17, pendulum 9 and arm 20 keep vertical positions. A suitable indicating dial 24 is fixed to the interior of the casing and coöperates with the pointer to indicate the amount of list, said dial being suitably

graduated to indicate feet and fractions thereof, the proper position of these graduations being obtained empirically.

The above described device operates as follows:—As before mentioned, when the ship is on an even keel. the pointer is in a vertical position and indicates zero on the dial. During the loading of the vessel, if there is a greater amount of cargo upon one side than the other, a certain list of the vessel results which carries the casing to one side or the other, the pendulum, however, remaining perpendicular when the casing assumes this new position, the pintle 15 is carried to one side, thereby moving the arm 20 correspondingly and causing the pointer to move in a like direction, the amount of list being indicated by the graduations opposite the upper end of the pointer.

Having fully described my invention, what I claim and desire to secure by Letters Patent is:—

In a device for indicating the list of vessels, the combination with a casing; a pintle mounted in said casing and having a horizontal axis; a pointer secured to said pintle; a scale coöperating with said pointer; a pendulum suspended in said casing and provided with a vertical slot; a lever arm secured to said pintle; and a rotatable sleeve mounted upon said arm forming a crank with the latter, said sleeve engaging said slot, whereby the position of the pendulum will determine the position of said pointer.

Signed by me, this 5th day of Aug., 1914.

LEWIS T. GLASER.

Attested by—

WM. R. MILLER,

A. E. MERKEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."