Aug. 19, 1924.

1,505,785

J. JIENGIEL

SHIP STABILIZER

Filed Sept. 20, 1923

2 Sheets-Sheet 1

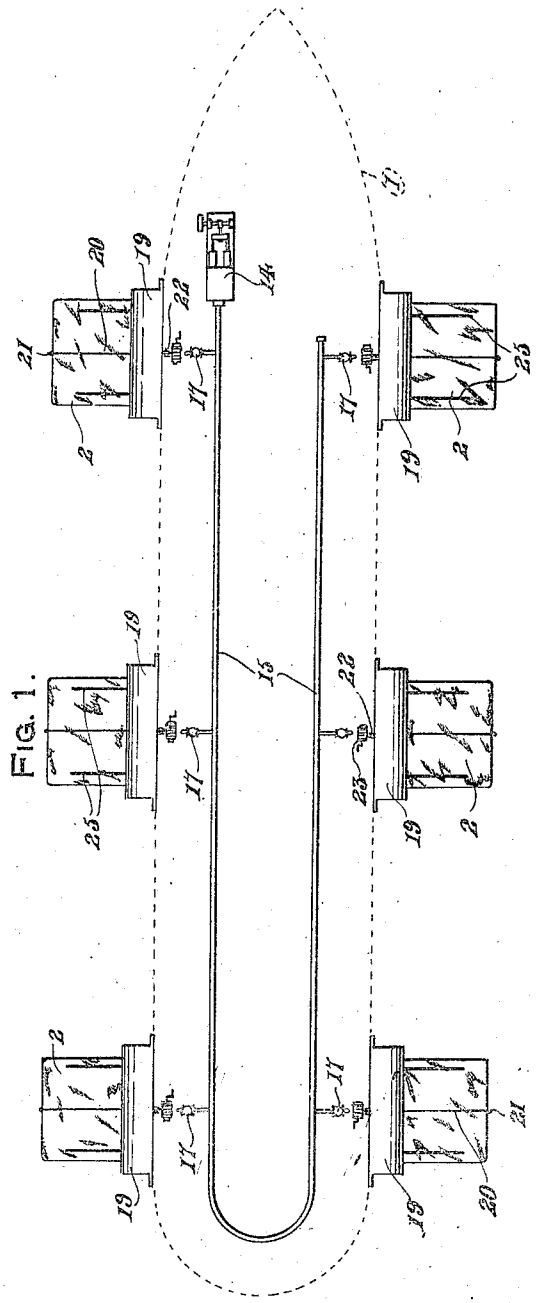


FIG. 1.

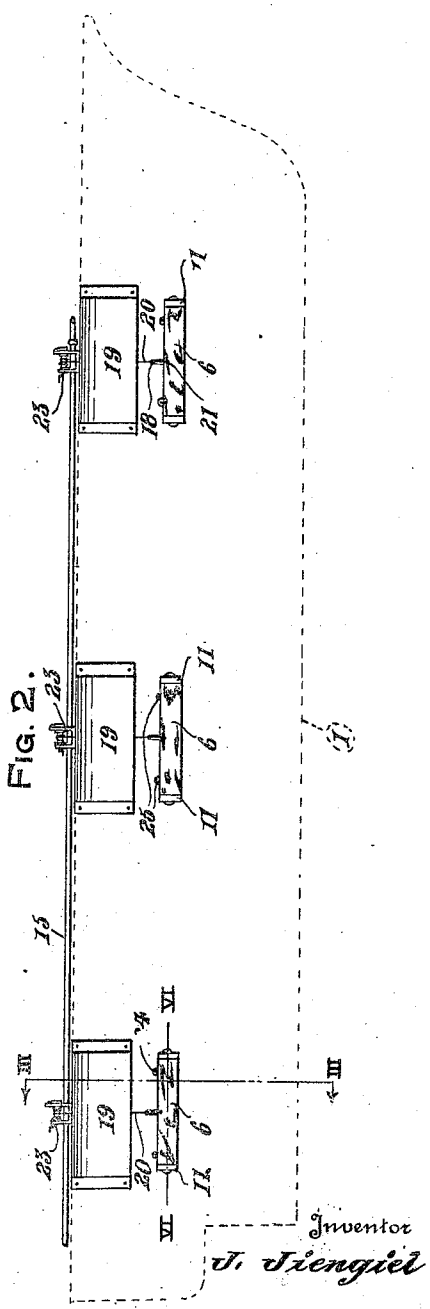


FIG. 2.

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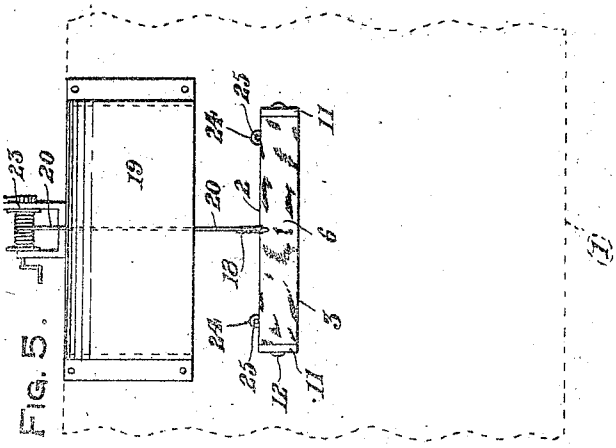


Fig. 5.

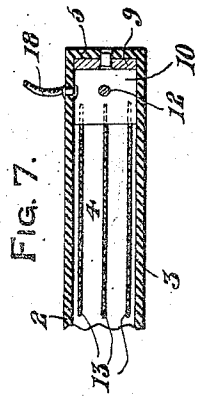


Fig. 7.

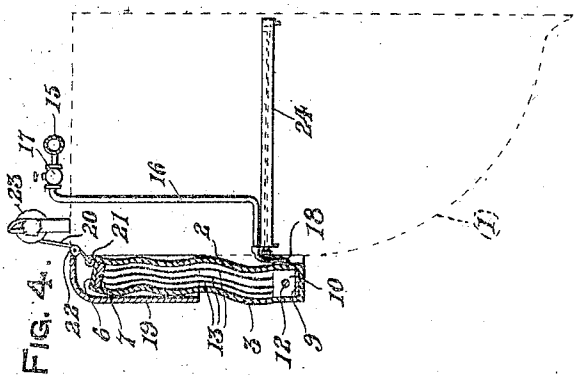


Fig. 4.

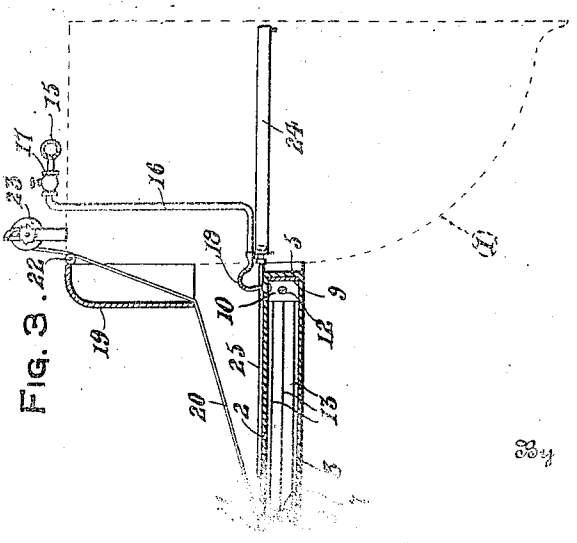


Fig. 3.

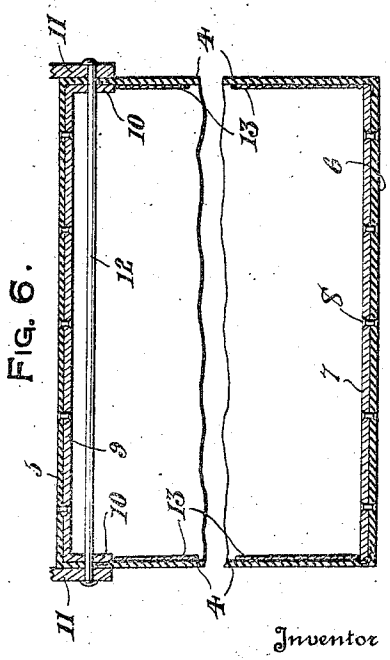


Fig. 6.

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UNITED STATES PATENT OFFICE.

JOHN JIENGIEL, OF SCRANTON, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WINCENTY JASUTA, OF MINOOKA, PENNSYLVANIA.

SHIP STABILIZER.

Application filed September 20, 1923. Serial No. 663,816.

To all whom it may concern:

Be it known that I, JOHN JIENGIEL, a citizen of Poland, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Ship Stabilizers, of which the following is a specification.

This invention relates to certain new and useful improvements in ship stabilizers and has for its primary object to provide a plurality of stabilizing floats associated with opposite sides of a boat or ship to reduce pitching and rocking of the ship.

Another object of the invention is to provide a stabilizer for ships in the form of collapsible pneumatic floats adapted when out of use to be folded for assuming positions adjacent the side walls of the ship, and when operatively positioned extend in horizontal directions outwardly of the ship with brace bars disposed thereabove to retain the floats properly positioned.

With the above and other objects in view as the nature of the invention is better understood, the same consists of the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings, wherein like reference characters designate corresponding parts throughout the several views,

Figure 1 diagrammatically illustrates by dotted lines, a ship in top plan view, equipped with the stabilizer forming the basis of this invention,

Figure 2 is a side elevational view of the same,

Figure 3 is a cross-sectional view taken on line III—III of Fig. 2 showing one of the stabilizing floats in its extended operative position with the brace rods overlying the same to prevent upward movement thereof,

Figure 4 is a detail sectional view, similar to Fig. 3 showing the stabilizing float in its inoperative retracted position,

Figure 5 is an enlarged side elevational view of the float in its extended operative position showing the covering hood therefor when retracted and the drum and cable for retracting the same,

Figure 6 is a detail sectional view taken on line VI—VI of Fig. 2 showing the inner construction of the stabilizing float, and

Figure 7 is a fragmentary detail sectional view showing the limiting ropes for the stabilizing floats preventing over-inflation thereof.

The stabilizing floats are associated with opposite sides of the ship 1, the float being formed of waterproof material, such as rubber or the like, and preferably rectangular in formation embodying upper and lower walls 2 and 3 respectively, end walls 4 and inner and outer walls 5 and 6 respectively. The outer wall 6 is reinforced by a metallic plate 7 secured thereto as at 8, while the inner wall 5 is similarly reinforced by a metallic plate 9 that is secured thereto with angularly bent ends 10 that engage the end walls 4 as shown in Figs. 6 and 7. Bracket arms 11 are carried by the side wall of the ship 1 and a pivot rod 12 extends through the bracket arms 11 and the bent ends 10 of the reinforcing plate 9 for hingedly mounting the stabilizing float upon the side wall of the ship. The stabilizing floats are adapted to be inflated and separating movement of the inner and outer walls 5 and 6 thereof is limited by the cords 13 anchored at their ends in the angularly bent ends 10 of the plate 9, and in the opposite ends of the reinforcing plate 7, these cords preventing undue longitudinal stretching of the floats when the same are inflated.

The inflating means for the stabilizing floats includes an air pump 14 supported on the ship 1 having a pipe line 15 extending therefrom in proximity of each one of the stabilizing floats arranged at opposite sides of the ship as clearly shown in Fig. 1. Branch pipes 16 provided with controlling valves 17 extends from the pipe line 15 to each stabilizing float, a flexible hose 18 connecting the branch 16 to the float permitting movement of the float relative to the branch pipe as will be obvious from an inspection of Figs. 3 and 4.

When the stabilizing floats are deflated and in their inoperative positions as illustrated in Fig. 4, the same are disposed contiguous to the upper side wall of the ship with the outer end thereof disposed inwardly of the hook 19. To shift the stabilizing floats to their inoperative positions, a cable 20 secured as at 21 to the outer end of the stabilizing float, the cable 20 passing upwardly within the hood 19 and over the guide pulley 22 to be received upon the

winding drum 23 supported on the gunwale of the ship.

In moving the stabilizing floats to their inoperative positions, the cable 20 is unwound from the drum mechanism 23, the float being shifted outwardly of the hood 19 and air under pressure is delivered thereto by the pump 14 and piping arrangement above described. With the stabilizing floats fully inflated, and maintained against longitudinal stretching by the cords 13, air or steam is delivered to the cylinder 24, as shown in Figs. 3 to 5 to project the piston rods 25 from the outer ends of the cylinders 24 to overlie the stabilizing floats as shown in Fig. 3 to maintain the same in a horizontal position by cooperation with the cable and drum mechanism above described.

With the stabilizing floats inflated and in their operative positions as shown in Figs. 1 to 3, the ship is effectively stabilized and rocking and pitching movements thereof are considerably reduced, the piston rods 25 overlying the stabilizing floats preventing upward movement thereof, while the floats are maintained in intimate engagement with the piston rods by the cable and winding drum mechanism. In retracting the stabilizing floats to their inoperative positions as shown in Fig. 4, air is exhausted from the float by opening the valves 17, it being understood that the pump 14 has ceased operation, the piston rods 25 being then retracted into the cylinder 24 and the cable drum mechanism operated for winding the cable 20 upon the drum 23 to draw the outer end of the float into the hood 19, positioning the stabilizing floats adjacent the upper edge of the ship and substantially above the water line.

While there is herein shown and described the preferred embodiment of the present invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What is claimed as new is:—

1. In a ship's stabilizer, a plurality of inflatable members hingedly mounted at each side of the ship, each member being formed of a waterproof casing having cords connecting the inner and outer ends to limit stretching upon inflation, a cable and drum associated with each member for retracting the same to inoperative position, a unitary air supply for the several members, means for retaining the inflated members horizontally positioned when projected for stablizing operation, the hinged mounting for the inflatable members including a metallic reinforcing strip within the inner end of the members, bent ends carried by the strip, brackets carried by the ship, and a pivot rod extending through the bent ends of the strip and the brackets.

2. In a ship's stabilizer, a plurality of inflatable members hingedly mounted at each side of the ship, each member being formed of a waterproof casing having cords connecting the inner and outer ends to limit stretching upon inflation, a cable and drum associated with each member for retracting the same to inoperative position, a unitary air supply for the several members, a plurality of telescoping rods carried by the ship having groups associated with each inflatable member adapted to overlie the members when projected to retain the same horizontally positioned, the hinged mounting for the inflatable members including a metallic reinforcing strip within the inner end of the member, bent ends carried by the strip, brackets carried by the ship and a pivot rod extending through the bent ends of the strip and the brackets.

In testimony whereof I affix my signature.

JOHN JIENGIEL.