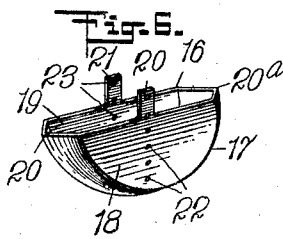
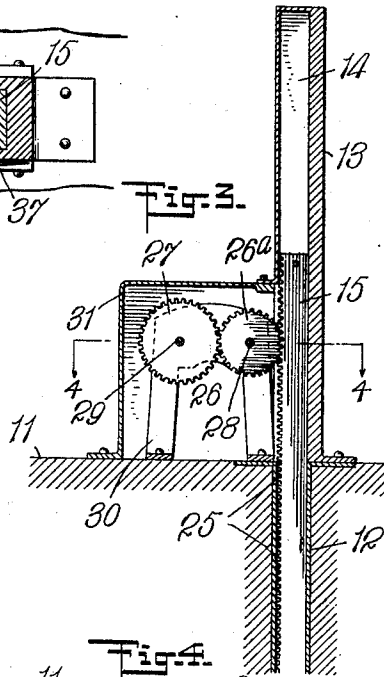
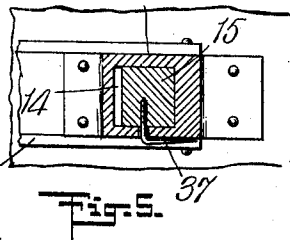
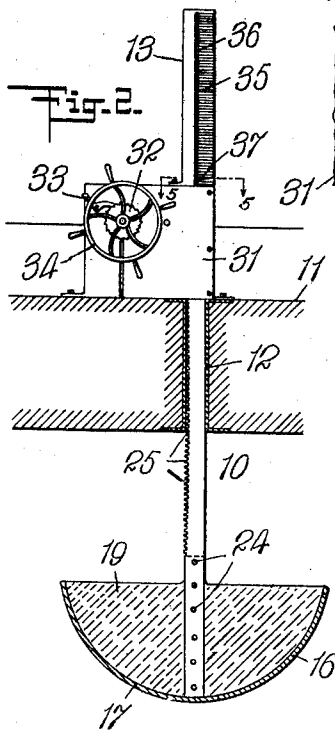
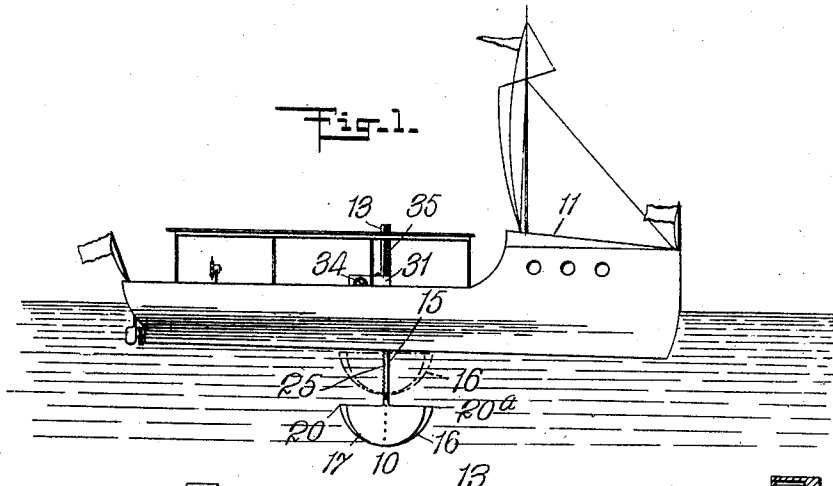


F. NEILSON.
 DEVICE FOR BALANCING BOATS.
 APPLICATION FILED JUNE 4, 1910.

972,398.

Patented Oct. 11, 1910.



Witnesses:
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UNITED STATES PATENT OFFICE.

FRANCOIS NEILSON, OF NEW YORK, N. Y.

DEVICE FOR BALANCING BOATS.

972,398.

Specification of Letters Patent.

Patented Oct. 11, 1910.

Application filed June 4, 1910. Serial No. 564,990.

To all whom it may concern:

Be it known that I, FRANCOIS NEILSON, a citizen of the Republic of France, and a resident of New York, county and State of New York, have invented certain new and useful Improvements in Devices for Balancing Boats, of which the following is a full, clear, and exact specification.

This invention relates to a class of devices adapted to be applied to boats, ships, and other vessels sailing upon the water for balancing and preventing the same from capsizing.

The primary object of the invention is to provide an efficient device which will serve as a ballast or balancing means whereby boats, ships or like vessels may be properly weighted and kept equipoised while sailing upon water and to provide a form of device adapted to be readily applied to any of such vessels.

Another object of the invention is to provide a form of casing or receptacle which may be loaded with the required weight to keep the vessel properly balanced, and to provide means for conveniently raising or lowering the weighted casing or balancing means into the water under the vessel to the desired depth, and furthermore my invention provides means for indicating the measurement of the depth to which said balancing means may be lowered and held.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views, the said invention being more fully described hereinafter and then pointed out in the appended claim.

In the drawing, Figure 1 is a side view of a vessel to which is applied one form of my invention. Fig. 2 is an enlarged side view partly in section, of the balancing device. Fig. 3 is a section, partly in detail, of the means for raising and lowering the weighted casing under the vessel. Fig. 4 is a section taken on the line 4—4 of Fig. 3. Fig. 5 is a section taken on the line 5—5 of Fig. 2, and Fig. 6 is a perspective of the weight-casing.

To a boat, or ship, or like vessel, as at 11, may be applied my balancing device 10 preferably at the central part of the vessel though I may employ more than one of the

devices at various parts thereof as occasion may require, and for the purpose of fitting the balancing device 10 to the vessel a suitable opening or tube, as at 12, is provided to extend through the interior of the body 60 of the boat midway of the sides thereof.

Upon the deck or within the hull of the boat 11 is arranged a vertical casing 13 the interior channel 14 of which communicates with the passage through the tubular casing 12, and adapted to be operated upwardly or downwardly within the vertical casing 13 and tube 12 is provided a lift-bar or rod 15 to the end of which is connected the weight-casing 16 for suspending said casing under the vessel.

The weight-casing 16 may be of any suitable form but I prefer to employ a casing having an elongated body 17 which is substantially semi-circular in shape and provided with flattened walls, as at 18 and 19. Both ends of the body 17 are pointed or V-shaped, as at 20 and 20^a, so that said weight-casing will effectually cut through the water and resist the pressure thereupon when the vessel is in motion. Obviously the weight-casing 16 may be of any desired size and within said casing may be placed the preferred weights or ballast adapted to keep the vessel properly equipoised. Extending from the upper edges of the walls 18 and 19 are provided lugs or tongues 20 and 21, and in said lugs, as well as the walls 18 and 19, are formed apertures 22 and 23 by which the weight-casing 16 may be connected to the lift-bar 15 by bolts passed through said apertures and through corresponding apertures 24 provided in the lower part of the lift-bar 15.

One of the vertical edges of the lift-bar 15 has teeth or may be provided with a toothed rack, as at 25, and to provide effectual means as at 26 for raising and lowering said lift-bar and the weight-casing 16, I employ a gear 26^a which meshes with the teeth 25 of the lift-bar 15 and meshing with the gear 26^a is a larger gear, as 27. The gears 26 and 27 are pivotally held upon shafts 28 and 29 journaled in one or more brackets, as at 30, which may be fastened to the deck of the boat by bolts or otherwise. These parts of my raising and lowering means 26 are inclosed within a suitable casing or box 31 which is detachably connected to the vertical casing 13 and to the deck of

the boat 11 respectively. Through an opening in one wall of the casing 31 extends the shaft 39 of the large gear wheel 27. A ratchet 32 is rigidly held upon the shaft 39 adjacent to the wall of the casing 31, and also upon the same wall of said casing adjacent to the ratchet 32 is movably held a pawl 33. To rotate the shaft 29 and rotate simultaneously therewith, the ratchet 32 and the gears 27 and 26 a crank handle, or as illustrated, a hand-wheel 34 is provided upon the end of the shaft 29. When it is desired to raise or lower the vertical shaft 13 the pawl 33 is thrown out of engagement with the teeth of the ratchet 32 and the means 26 may then be operated by the hand-wheel 34 for raising and lowering the vertical bar 15 and the weight-casing 16, but when it is desired to retain the weight-casing 16 at an adjusted depth in the water the means 26 is held against operation by throwing the pawl 33 into engagement with the teeth of the ratchet 32.

For the purpose of permitting the occupants of the boat to know how far the weight-casing is lowered under the vessel, a scale, as at 35, is provided upon one of the outer surfaces of the vertical casing 13, and a vertical slot 36 may be formed in said casing for passage therethrough of a pointer or indicator 37 which is held in the upper end of the lift-bar 15. The scale 35 may be numbered or lettered and the pointer 37 which is disposed to extend across the face of said scale will clearly indicate the exact number of feet which the casing 16 is lowered in the water.

It is understood that changes may be made in the form or in the proportions of the parts comprising my improved device for balancing boats and that said device or more than one of the devices may be applied at the same time to a boat, without departing from the scope and purpose of my invention, therefore I do not wish to be

limited to the particular form of device herein described and shown.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

In a device for balancing boats, the combination of a vertical casing arranged within the hull of a boat, and having an interior channel communicating with the passage through a tube extending through the body of the boat, a scale provided upon one surface of the wall of the vertical casing, a vertical slot also formed in the same wall of said vertical casing, a casing adapted to be loaded with the required weight to balance the boat, said casing having flattened sides and V-shaped ends, a lift-bar having teeth upon one of the vertical edges thereof and movably held within the vertical casing and said tube, a pointer held in the upper end of the lift-bar and disposed through the slot of the vertical casing and across said scale, a gear meshing with the teeth of said lift-bar, a larger gear meshing with the teeth of the first gear, a bracket held to the deck of the boat, a shaft pivoting the first gear to the bracket, a longer shaft pivoting the second gear to said bracket, a casing inclosing said gears and the bracket, a ratchet held upon the longer shaft, a pawl held to the casing inclosing the gears and adapted to engage the teeth of the ratchet, and a hand-wheel held upon the longer shaft and adapted to rotate the larger gear for rotating the first gear by which the lift-bar and said casing may be raised or lowered to the required depth in the water.

This specification signed and witnessed this first day of June A. D. 1910.

FRANCOIS NEILSON.

Witnesses:

ROBT. B. ABBOTT,
C. GASSERT.