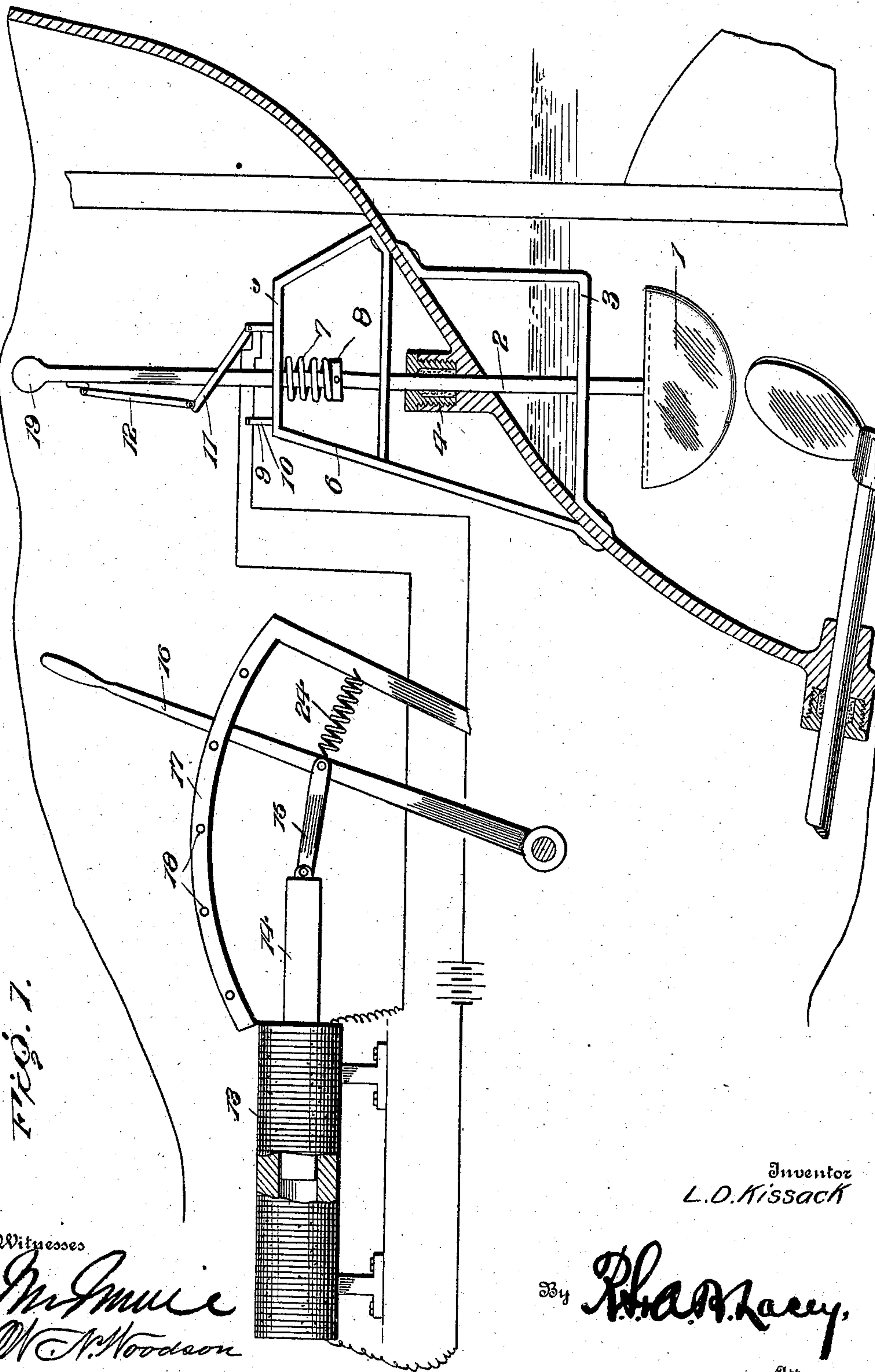


No. 881,697.

L. D. KISSACK.
MARINE GOVERNOR.
APPLICATION FILED MAY 10, 1907.

PATENTED MAR. 10, 1908.

2 SHEETS—SHEET 1.



Witnesses

Witnesses
 J. J. Miller
 W. J. Woodson

Inventor
L.O. Kissack

ପୌ.

Pharm. Recy.

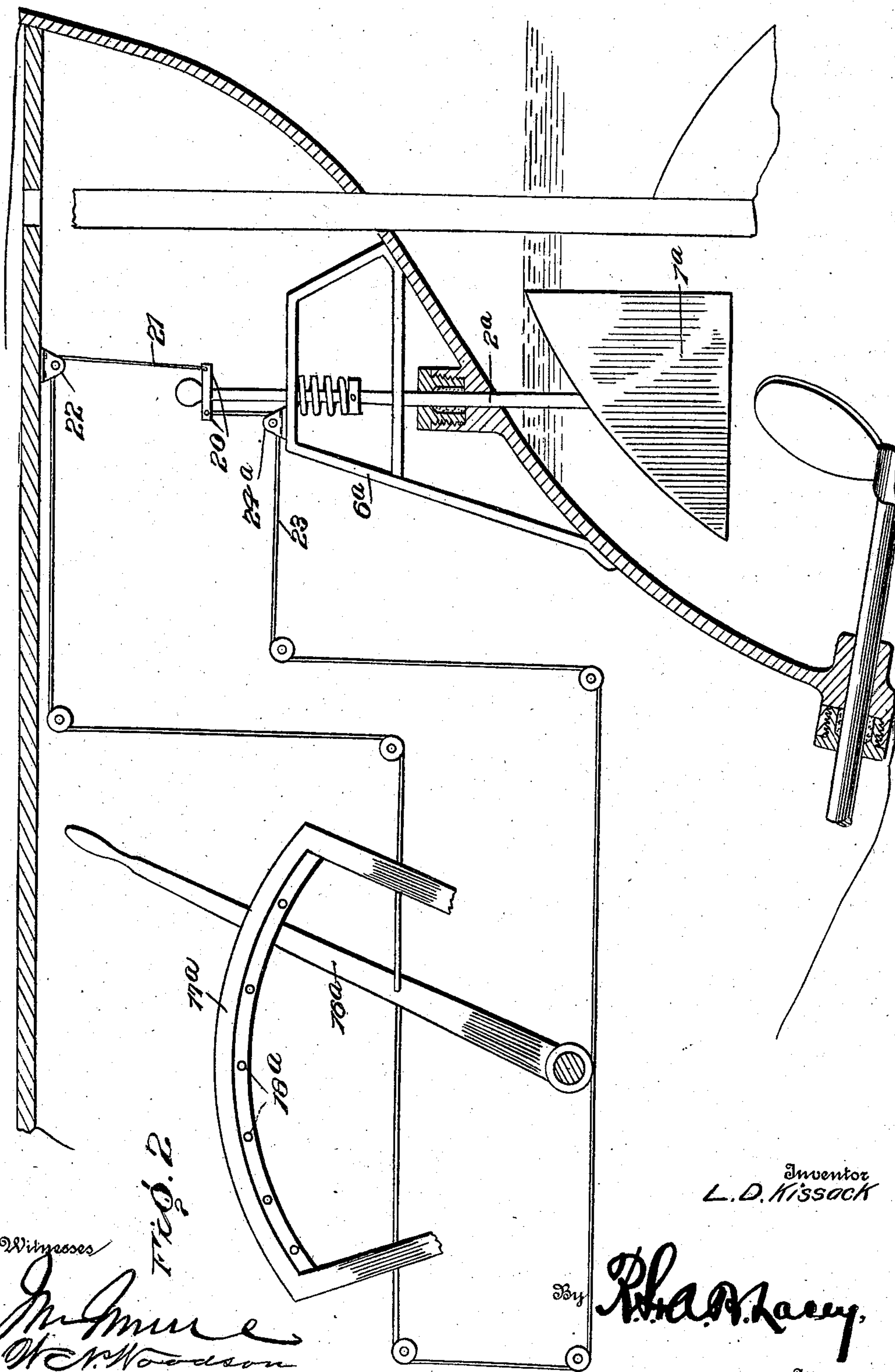
Attorneys

No. 881,697.

L. D. KISSACK,
MARINE GOVERNOR.
APPLICATION FILED MAY 10, 1907.

PATENTED MAR. 10, 1908.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

LEWIN D. KISSACK, OF CLOVERDALE, CALIFORNIA.

MARINE GOVERNOR.

No. 881,697.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed May 10, 1907. Serial No. 372,998.

To all whom it may concern:

Be it known that I, LEWIN D. KISSACK, citizen of the United States, residing at Cloverdale, in the county of Sonoma and State of California, have invented certain new and useful Improvements in Marine-Engine Governors, of which the following is a specification.

This invention contemplates certain new and useful improvements in governors for marine engines, and relates particularly to improvements in means for preventing the propeller shaft or shafts from racing due to the lifting of propellers out of the water in heavy seas, as the vessel pitches.

The invention has for its object simple, durable and efficient construction of apparatus which will sensitively govern the throttle of the engine, and automatically move the throttle to the closed position whenever the propeller shaft or shafts are raised high enough to lift the propellers out of the water, and the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and then point out the novel features in the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a sectional view through the stern of a ship, illustrating the application of my improved marine engine governor as electrically actuated. Fig. 2 is a similar view illustrating a modification and also illustrating the device as mechanically actuated.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

My invention comprises any number of buoyant drums, according to the number of screws or propellers and their shafts employed, but as they may be substantially alike I deem it necessary to describe only one.

Referring to the drawings, the numeral 1 designates one form of buoyant drum which is made semi-spherical as shown, and which is air tight and preferably composed of copper or other material which will not rust when exposed to the action of the water. An upwardly extending shaft 2 is connected to

the drum 1, said shaft being preferably composed of bronze or similar substance, and said shaft may extend upwardly through a right angle bracket 3 secured to the outside of the ship's keel, the lower horizontal member of said bracket serving as a guide for the shaft and also as a smooth or solid seat against which the drum 1 is adapted to abut at the upward limit of its movement. The shaft 2 projects upwardly through the keel and through a stuffing box 4 and also through the cross bar 5 of a bracket or stand 6 on the inside of the ship's bottom. A coil spring 7 encircles the shaft 2 near the upper end of the latter and bears against the upper cross bar of the stand and also against a collar or washer 8 secured on the shaft, the tendency of said spring being to move the shaft 2 downwardly, and said downward movement being limited by the abutment of the collar 8 on the stand.

9 and 10 designate the two terminals of the double pole switch which is mounted upon the upper cross bar of the stand 6, preferably at opposite sides of the shaft 2. The blades 11 of the switch are preferably in the form of an open framework which extends around the shaft as shown, and a link 12 is pivotally connected at its lower end to the frame of which the blades 11 form a part, and at its upper end to the shaft 2. The said switch is included in an electric circuit for which a dynamo or any other suitable source of supply may be provided. Also included in said circuit is a solenoid 13 containing a core or plunger 14. The electro magnet may be supported on any desired bed plate or secured to any bulk head or any other stationary part of the vessel. The pivoted link 15 connects one end of the core 14 with the throttle lever 16 of the engine (not shown), said throttle lever being mounted to move between the curved guides 17 which are provided with registering apertures 18 through which a pin may be inserted so as to limit the movement of the throttle lever. A spring 24 is connected to the throttle lever and to one support of the curved guides, the tension of said spring being exerted to draw the throttle lever to the open position. The upper end of the shaft 2 may be formed with a hand knob 19, so that the engineer or other attendant may press the shaft downwardly so as to test the apparatus.

In the practical operation of my improved

marine engine governor, the buoyant drum is normally submerged and its buoyancy tends to hold the shaft 2 at the upper limit of its movement with the electric circuit open. As soon, however, as the vessel pitches to such extent as to carry the propeller and the drum out of the water, it is evident that the weight of the drum, assisted if needed by the tension of the spring 7, will move the shaft 2 downwardly and close the electric circuit. This will energize the solenoid 13 and draw in the core or plunger 14 so as to move the throttle lever 16 toward the closed position and automatically shut off the steam. Hence it will be seen that the propeller shaft will be automatically governed and will be prevented from racing and causing the consequent heavy vibration and shock to the vessel, when the propeller is lifted out of the water.

If desired, the bracket 3 may be done away with and the buoyant drum formed in another shape so as to fit properly against the hull of the vessel. A drum of such character is illustrated in Fig. 2, designated 1^a.

My invention also comprehends means for mechanically controlling the movement of the engine throttle, such means being illustrated in Fig. 2, and 2^a designates the shaft which is raised and lowered by the buoyant drum. The shaft 2^a is provided with arms 20, preferably secured thereto near its upper end, and a cable 21 is connected to one of said arms and may extend over a pulley 22 supported from the lower side of the deck above the governor mechanism. Another cable 23 is secured to the other arm 20 and is adapted to extend around a pulley or roller 24^a journaled in brackets on the upper cross bar of the stand 6^a, and both of said cables are connected at their ends to the throttle lever 16^a extending oppositely from said throttle lever and adapted to pull said throttle in one direction or the other according as the shaft 2^a is raised or lowered. The throttle 16^a is mounted between the guides 17^a that are formed with registering apertures 18^a, so that a pin may be inserted through a registering pair of apertures to limit the movement of the throttle lever.

From the foregoing description, in connection with the accompanying drawings, it will be seen that I have provided a very simple and efficient construction of apparatus for preventing the racing of propeller shafts of vessels owing to the raising of the screw out of the water when the vessel pitches, the ap-

paratus sensitively controlling the throttle of the steam engine of the vessel and being composed of comparatively few and simple parts that may be readily assembled without material changes in the construction of the vessel or in the construction of the throttle and its concomitant parts.

Having thus described the invention, what is claimed as new is:

1. The combination with a marine vessel, its propeller shaft and engine throttle lever, of a buoyant drum adapted to be submerged in juxtaposition to the propeller shaft, a shaft connected to said drum and extending upwardly through the hull of the vessel, a stand through which said shaft extends, said stand being provided with a cross bar, a spring encircling said shaft and bearing at its upper end against the cross bar, a collar secured on said shaft and against which the other end of said spring bears, the said collar abutting against the stand and limiting the downward movement of the shaft through the stand, and connecting means between said shaft on the inner side of the hull and said throttle lever, said connecting means being arranged to move the throttle lever towards the closed position when the drum lowers and to the opposite position when the drum rises.

2. The combination with a marine vessel, its propeller shaft, and engine throttle, of a buoyant drum adapted to be submerged in juxtaposition to the propeller shaft, a shaft connected to the drum and extending upwardly through the hull of the vessel, a stand through which said shaft extends, a spring encircling said shaft and tending to move the shaft downwardly, an electric switch mounted upon said stand, a link connecting the circuit opening and closing device of said switch with the shaft, an electric circuit in which said switch is included, a solenoid also included in said circuit, and provided with a core or plunger, a link connecting said plunger with the engine throttle, whereby when the circuit is closed the core will move the throttle in one direction, and a spring tending to move the throttle in the opposite direction.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIN D. KISSACK. [L. S.]

Witnesses:

GEORGE M. BROWNE,
OWEN PETER SMITH.