

No. 762,923.

PATENTED JUNE 21, 1904.

C. E. MILES.
SPEED GOVERNOR FOR SHIP PROPELLERS.

APPLICATION FILED AUG. 10, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1.

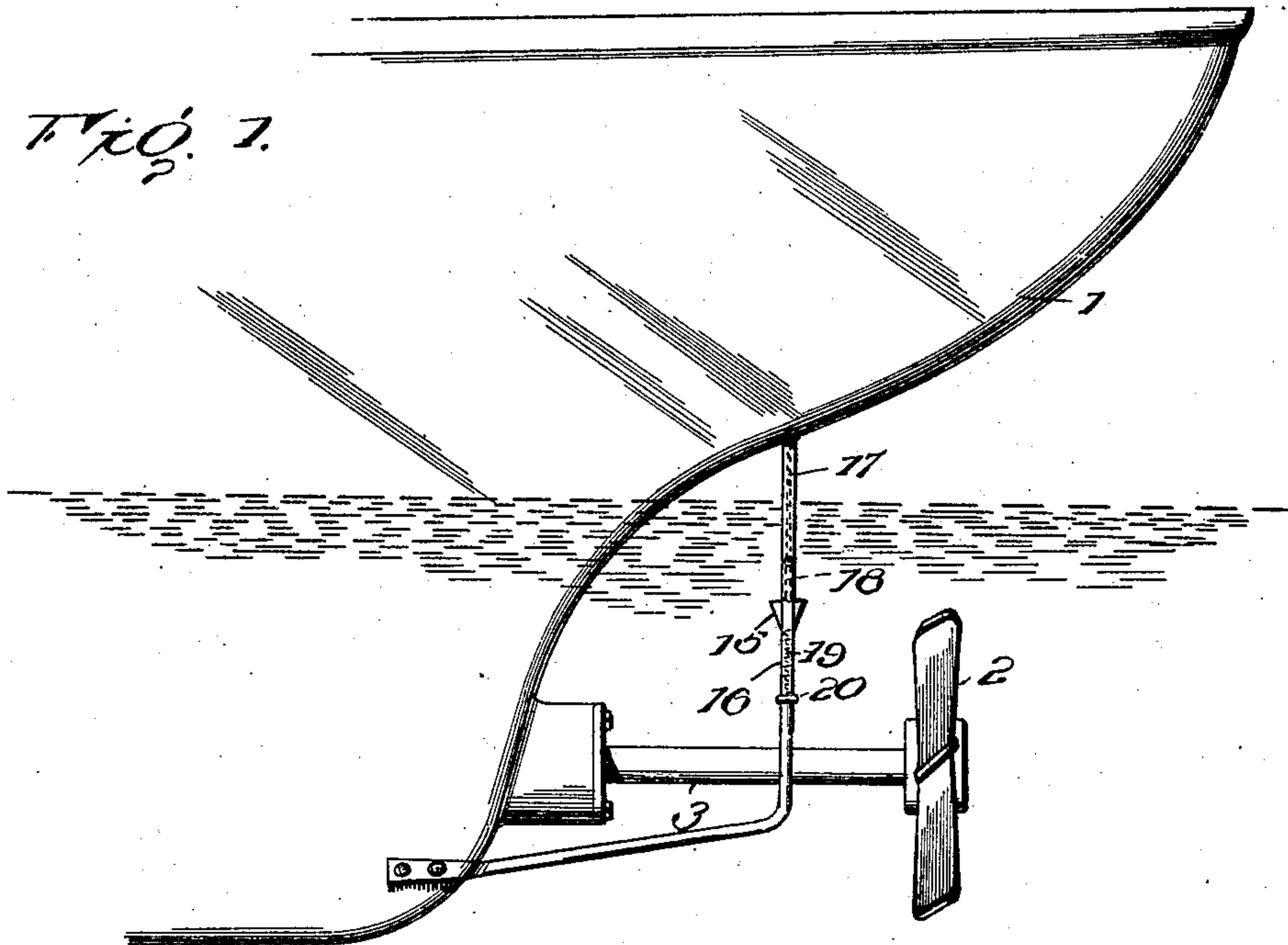


FIG. 4.

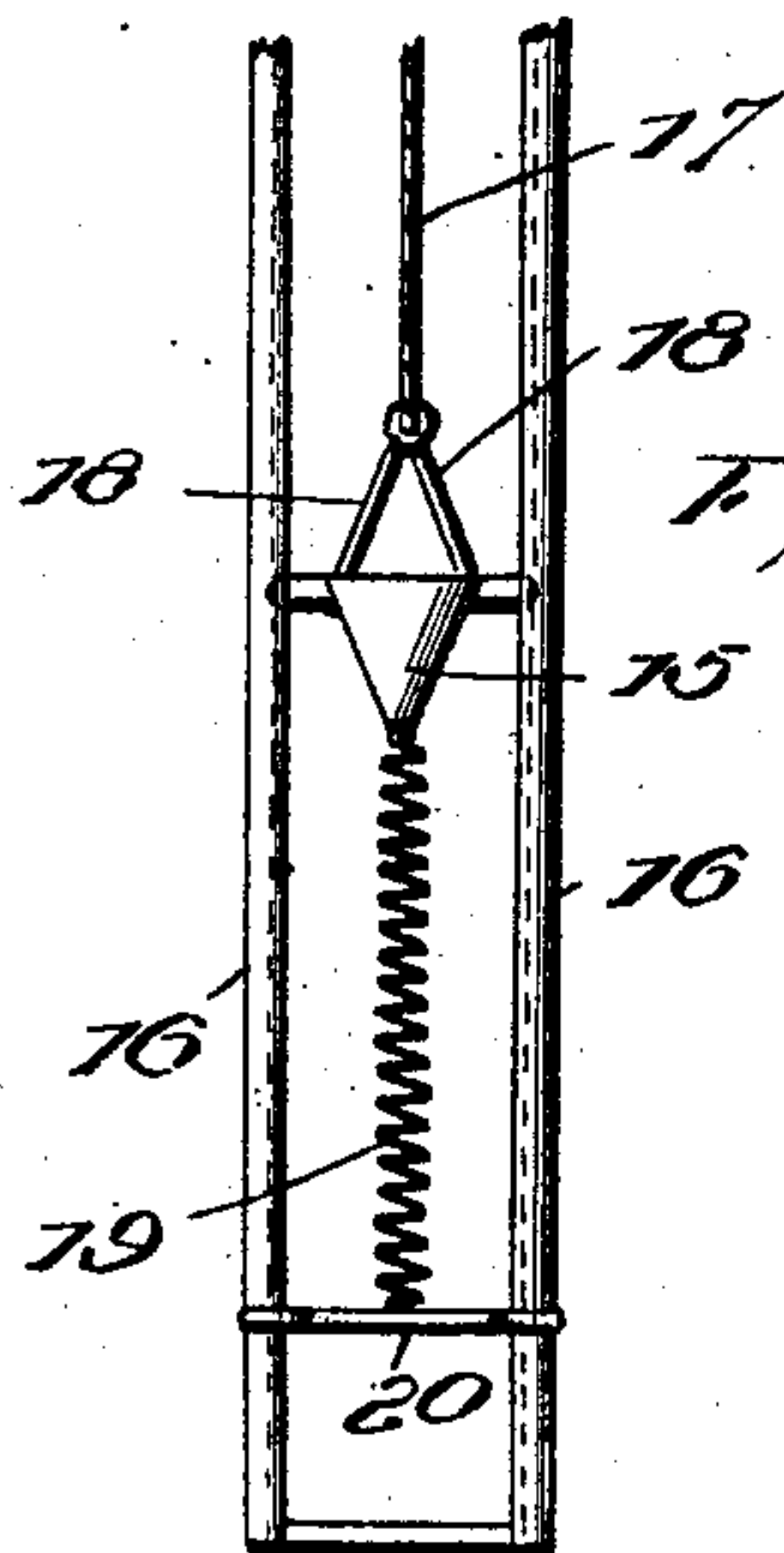
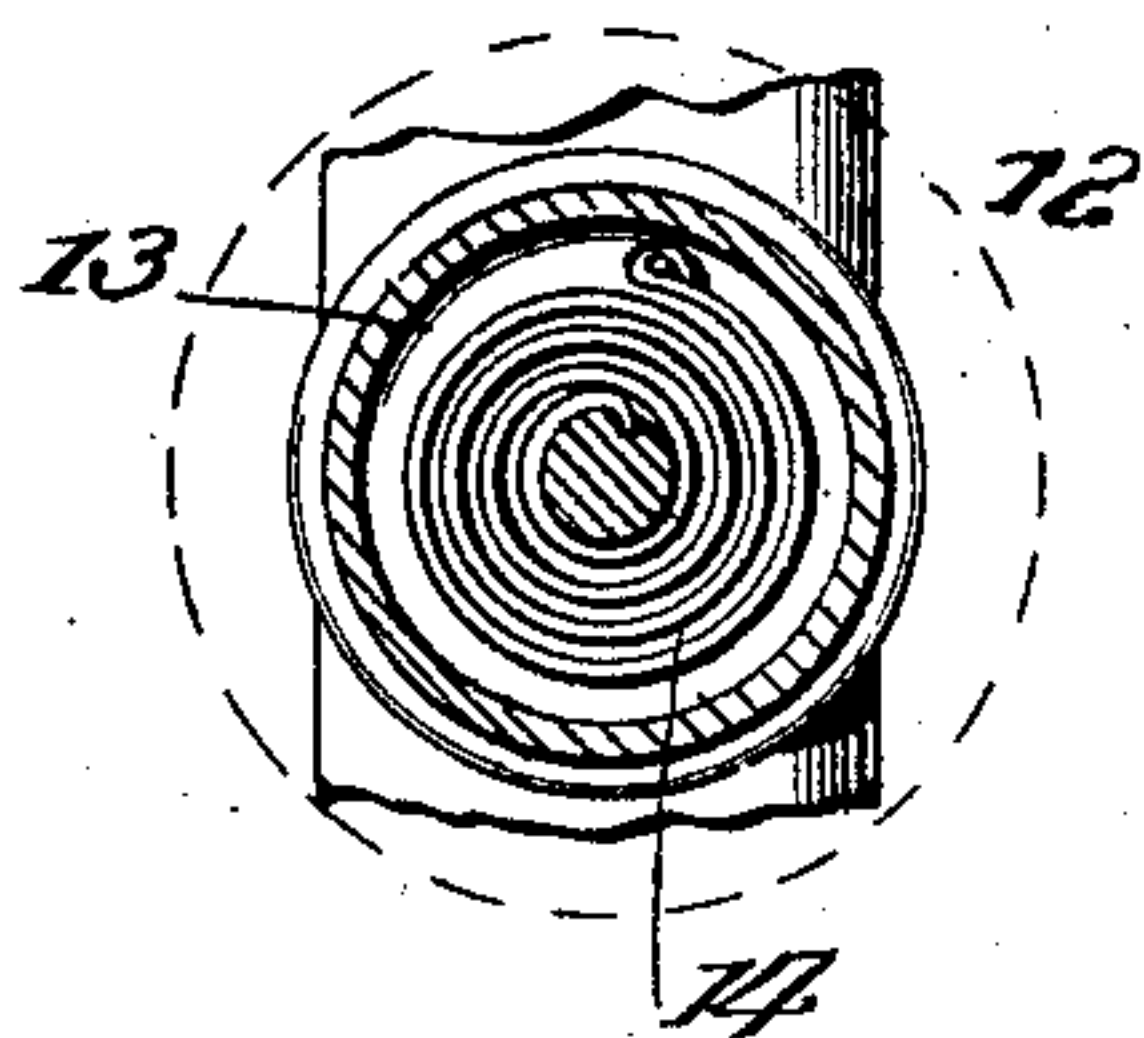


FIG. 5.

Witnesses:
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2 SHEETS—SHEET 2.

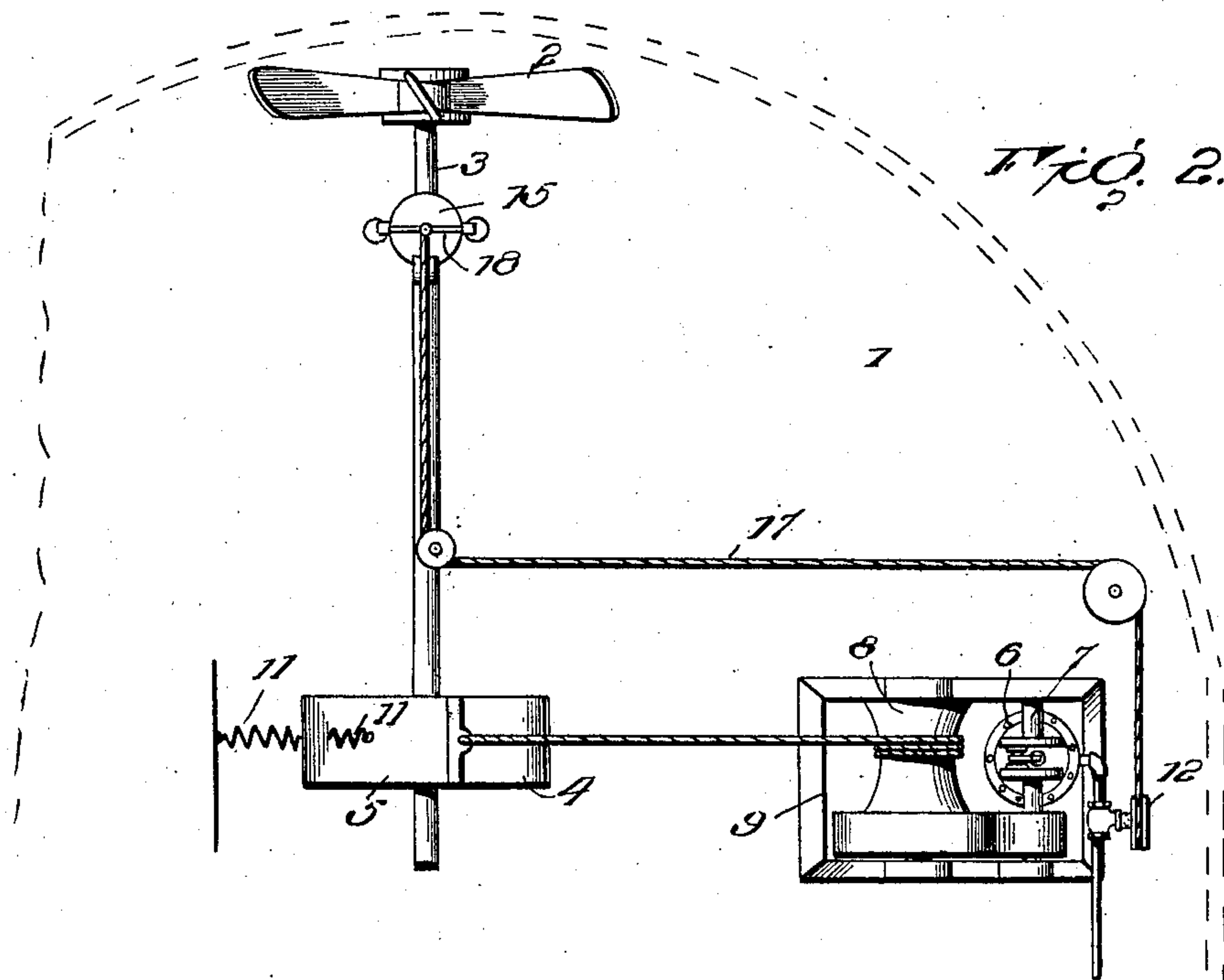


FIG. 2.

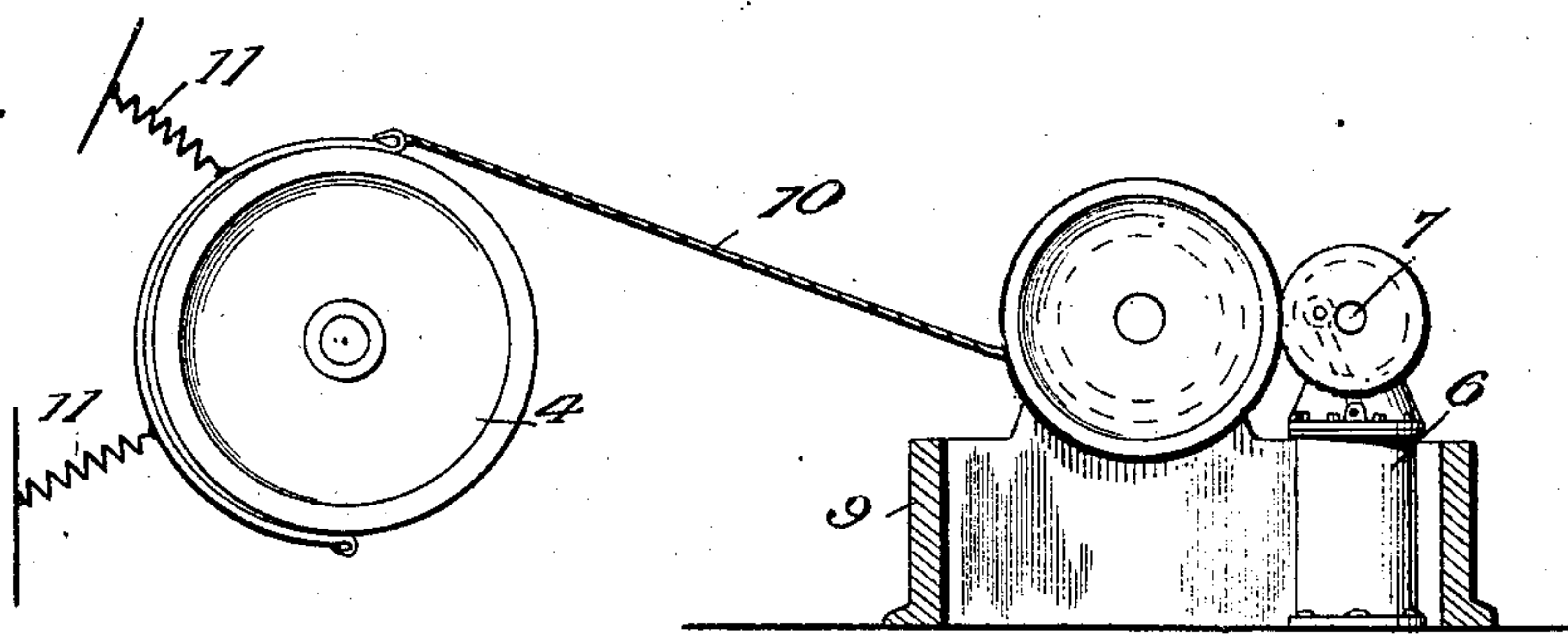


FIG. 3.

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UNITED STATES PATENT OFFICE.

CHARLES E. MILES, OF POMONA, FLORIDA, ASSIGNOR OF ONE-HALF TO
FRED H. WILLSON, OF PALATKA, FLORIDA.

SPEED-GOVERNOR FOR SHIP-PROPELLERS.

SPECIFICATION forming part of Letters Patent No. 762,923, dated June 21, 1904.

Application filed August 10, 1903. Serial No. 168,990. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. MILES, a citizen of the United States, residing at Pomona, in the county of Putnam and State of Florida, have invented certain new and useful Improvements in Speed-Governors for Ship-Propellers, of which the following is a specification.

The object of this invention is to provide automatic means for regulating the speed of the propeller of ocean-going vessels so as to obviate the frequent breakage of the propeller or adjacent parts, straining of the bearings, or like casualty due to sudden plunges of the vessel in high seas, constant pitching of the same throwing the propeller out of the water and again immersing it, with results often very disastrous.

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

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the stern of a vessel, showing the regulator means applied thereto. Fig. 2 is a top plan view showing the rear of a vessel in dotted lines and the brake means for regulating the speed of the propeller. Fig. 3 is a side elevation of the engine and cooperating brake means actuated thereby for regulation of the speed of the propeller. Fig. 4 is a detail view showing valve means for admission and shutting off of the steam entering the cylinder of the engine. Fig. 5 is a detail rear elevation, partly broken away, of the hydroregulator carried by the overhang of the vessel.

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.

The invention is shown applied to a vessel 1, propelled by the ordinary form of propeller

2. However, it will be understood that the invention is equally applicable to vessels propelled by any of the common types of propelling means at present in use. The propeller is disposed upon propeller-shaft 3, which is disposed in the usual manner adjacent the stern of the vessel. The propeller is actuated by engines properly located within the vessel, and the speed of the same may be regulated by regulating the speed of such engines should this be desired. The speed of the propeller in this instance, however, is regulated through the medium of brake means applied to the propeller-shaft 3, said means comprising a pulley 4 and brake-band 5, applied to the pulley for operation by an engine 6, located within the body of the vessel and of a type suitably constructed for the purpose for which it is employed. The engine 6 primarily is used for actuation of a drive-shaft 7, which is disposed so as to revolve a drum 8, disposed adjacent the engine, preferably upon the engine-frame 9. The drum is connected with the brake-band 5 by a cable 10. The brake-band 5 is held normally out of contact with the pulley 4 by means of springs 11 secured thereto. The revolution of the drum 8 when the engine 6 is started will cause the brake-band to be applied in contact in a greater or less degree, depending upon the amount of steam admitted to the cylinder of the engine by the valve means 12. The valve means 12 is of peculiar form, comprising the rotary valve 13 and the spring 14, which is disposed adjacent the valve and secured thereto in such a manner as to hold the same normally in a position so as to cut off the passage of steam to the engine 6. For operation of the valve a float or hydroregulator 15 is arranged upon the stern of the vessel adjacent the propeller 2. The float 15 is of inverted conical form and is arranged to slide in guides 16, which are suitably secured upon the overhang of the vessel. Guides 16 are arranged approximately in a vertical position, and a cable or connection 17 passes through the rear end of the vessel at a point about intermediate the guides and is secured to the upper side portion of the regulator 15 by bars or straps 18.

The regulator 15 is normally held at a certain depth beneath the surface of the water, determined by the size of the vessel to which the invention is applied, by means of a spring 19, located intermediate the guides and secured at one end to the lower end of the regulator 15 and at the other end to a transverse bar 20, carried adjacent the lower end portion of the guides.

10 The device is automatic in its operation, upward movement of the rear of the vessel carrying the propeller 2 causing the regulator 15 to move downwardly, due to the pressure of the water exerted against the upper
15 side thereof, and this movement through the medium of the connection 17 opens the valve 13 and the engine 6 is started, applying the brake-band 5. The amount of pressure exerted by the brake-band 5 upon the pulley 4,
20 caused by the initial movement of the regulator 15, is determined by the extent of such movement, so that if the ship pitches but slightly the speed of the propeller will be diminished in proportion to such pitching move-
25 ment. Consequently should the sea be sufficiently high to throw the propeller entirely out of the water the regulator 15 will have been so actuated by the downward impact of the water in this movement that the valve 13 will
30 be opened wide and the brake will be applied, so as to either entirely prevent revolution of the propeller-shaft or diminish such revolution, that no resulting damage may arise. The ship regaining its normal position in the
35 water, the regulator is restored to its original position under the tension of the spring 19, and the valve 13 closes or partially closes under the direct tension of the spring 14.

40 The form of the regulator is of importance, since the same is made more sensitive to the pressure of the water as the stern of the ship rises and is adapted on account of its shape to readily return to its normal position under the actuation of the spring 19.

45 When the ship is proceeding under way without pitching or rolling, the regulator is maintained in its normal position beneath the water and the brake means remain inoperable.

50 Having thus described the invention, what is claimed as new is—

1. In a speed-governor for ships, the com-

bination with propelling means, means disposed within the ship for regulation of the speed of the propelling means aforesaid, and a hydroregulator disposed beneath the surface 55 of the water adjacent the propelling means for operation of the speed-regulating means within the ship, said regulator being adapted for actuation by pressure of the water against the upper side thereof. 60

2. In a speed-regulator for ships, the combination with propelling means of the ship, means for regulation of the speed of the propelling means aforesaid, a hydroregulator carried by the ship adjacent the propelling means 65 and disposed beneath the surface of the water and subject to pressure of the water from all directions and adapted for actuation of the speed-regulating means aforesaid.

3. In a speed-regulator for ships, the combination with propelling means of the ship, means for regulation of the speed of the propelling means aforesaid, a hydroregulator carried by the ship adjacent the propelling means 75 and disposed beneath the surface of the water and subject to pressure of the water from all directions and adapted for actuation of the speed-regulating means aforesaid, and independent means normally holding the hydroregulator in an operative or predetermined position. 80

4. In a speed-governor for ships, the combination with a propeller, brake means for regulating the speed of the propeller, valve means cooperating with said brake means, 85 springs for cooperation with the valve for normally holding same so as to prevent operation of the brake means, guides projected from the outer side of the ship adjacent the propeller, a float of conical form mounted for movement 90 within the said guides and connected with the valve means for operation thereof and spring means disposed upon the guides and normally adapted to hold the float in an ascertained position. 95

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

CHARLES E. MILES. [L. s.]

Witnesses:

A. S. WILLARD,
R. RAYMOND PRICE.