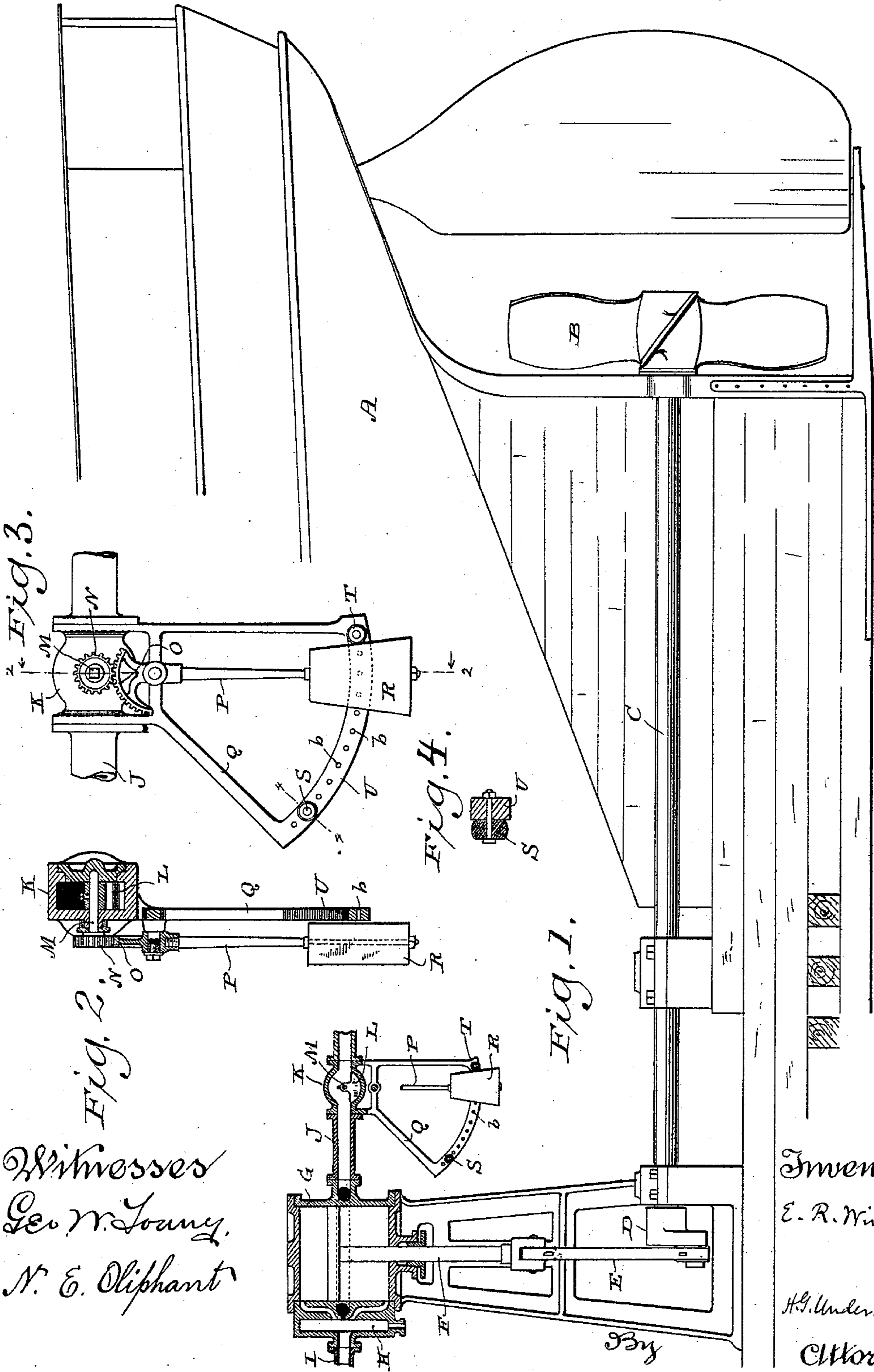


(No Model.)

E. R. WINTER.  
MARINE ENGINE GOVERNOR.

No. 539,466.

Patented May 21, 1895.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ERASTUS R. WINTER, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-THIRD TO EDWARD J. WAGNER, OF SAME PLACE.

## MARINE-ENGINE GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 539,466, dated May 21, 1895.

Application filed May 17, 1890. Serial No. 352,235. (No model.)

*To all whom it may concern:*

Be it known that I, ERASTUS R. WINTER, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Marine-Engine Governors; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to marine engines; and it consists in certain peculiarities of construction and combination of parts to be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a side elevation, partly in section, and illustrates an application of my invention; Fig. 2, a section on line 2 2 of the succeeding figure; Fig. 3, a detail side elevation of a valve-controlling mechanism that constitutes part of my invention, and Fig. 4 a section on line 4 4 of the preceding figure.

Referring by letter to the drawings, A represents a portion of a marine-vessel, B, the propeller-wheel for the vessel, and C the shaft for said wheel. The shaft is provided with the usual crank D and this crank is connected by a link E with the piston-rod F of a marine-engine, the cylinder G, chest H, steam-inlet I and steam-exhaust J of said engine being clearly illustrated in Fig. 1. Fitted to the exhaust J of the engine is a chamber K for a rocker-valve L and fast on the stem M of this valve is a pinion N in mesh with a segmental rack O at the upper end of a rod P, the latter being pivotally connected to a bracket Q that depends from said chamber. Secured to the lower end of the rod P is a pendulum R, the swing of this pendulum being controlled by stops S, T, bolted, or otherwise secured, to the segmental lower portion U of the bracket Q, and, as shown, this segmental portion of said bracket is provided with a series of perforations b at suitable intervals in order that the stop S may be adjusted, as to position, to regulate or prevent the forward swing of said weight.

When the vessel A is running in smooth water the stop S is set so as to be close against the pendulum R on the rod P, and the stop T is always set so that when said pendulum

is in contact therewith the valve L will be full open and the exhaust J of the engine unobstructed. Should the water become rough enough to cause the vessel to pitch fore and aft the stop S is to be adjusted on the segmental portion U of the bracket Q in order to permit of the pendulum R having more or less swing in proportion to the motion of said vessel.

Assuming that the stops S, T, are set as shown in the drawings and the vessel rises at the stern, the pendulum R will swing forward and thus move the rod P on its pivot to actuate the rack-and-pinion gear O, N, and thereby cause the valve L to rock up into the exhaust J of the engine. This movement of the valve being proportionate to the movement of the vessel, the exhaust of the engine is more or less obstructed and consequently there is a back-pressure or cushion of steam in the engine-cylinder in proportion to the area of the propeller-wheel B exposed above the surface of the water by said movement of the vessel and consequently the speed of said wheel is not increased to any material degree. In other words, the back-pressure or steam-cushion in the engine cylinder compensates for the diminished water resistance to the propeller-wheel this compensation being proportionate to the movement of the vessel and serving as a check against momentum acquired by said wheel.

It is obvious that a rocker-valve and its actuating mechanism as above described may be employed in connection with the inlet I to automatically cut-off the steam in proportion as the water resistance to the propeller-wheel is diminished, but this latter arrangement of parts is less desirable than the former, because of there being no check against the momentum acquired by said wheel.

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

The combination with a marine-engine and propeller-wheel in connection therewith, of a chamber fitted to the exhaust of the engine-cylinder, a rocker-valve in the chamber, a pinion on the valve-stem, a bracket depending from said chamber, a rod pivoted on the

bracket and having a segmental rack at its upper end in mesh with said pinion, a pendulum secured to the lower end of the rod, and stops adjustable on said bracket in the  
5 path of said rod in opposite directions therefrom, substantially as set forth.

In testimony that I claim the foregoing I

have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

ERASTUS R. WINTER.

Witnesses:

N. E. OLIPHANT,

WM. KOBERG.