M. HULINGS.

Marine-Governor.

No. 211,738. Patented Jan. 28, 1879.

Fig. 1

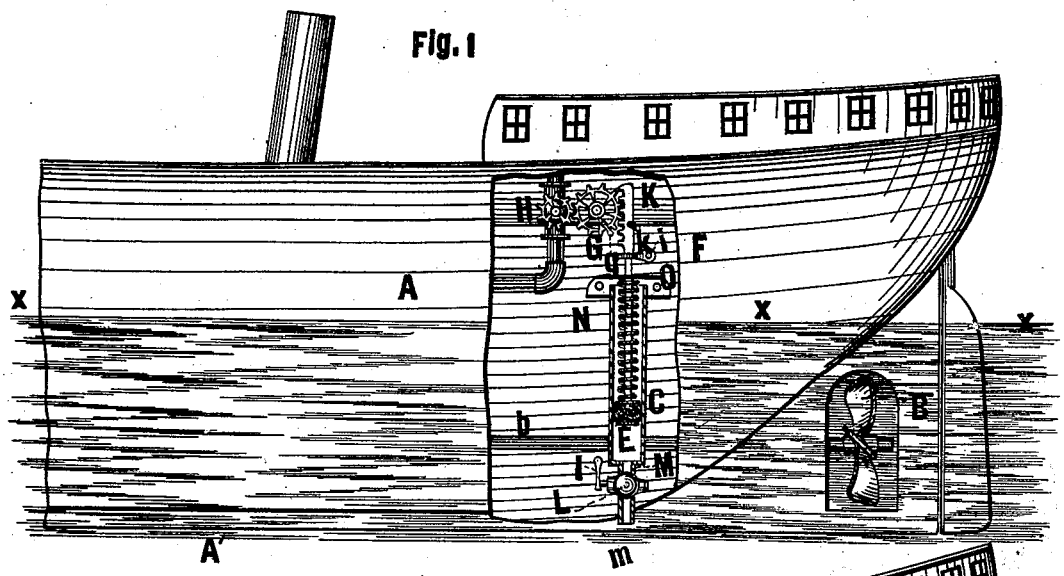


Fig. 2

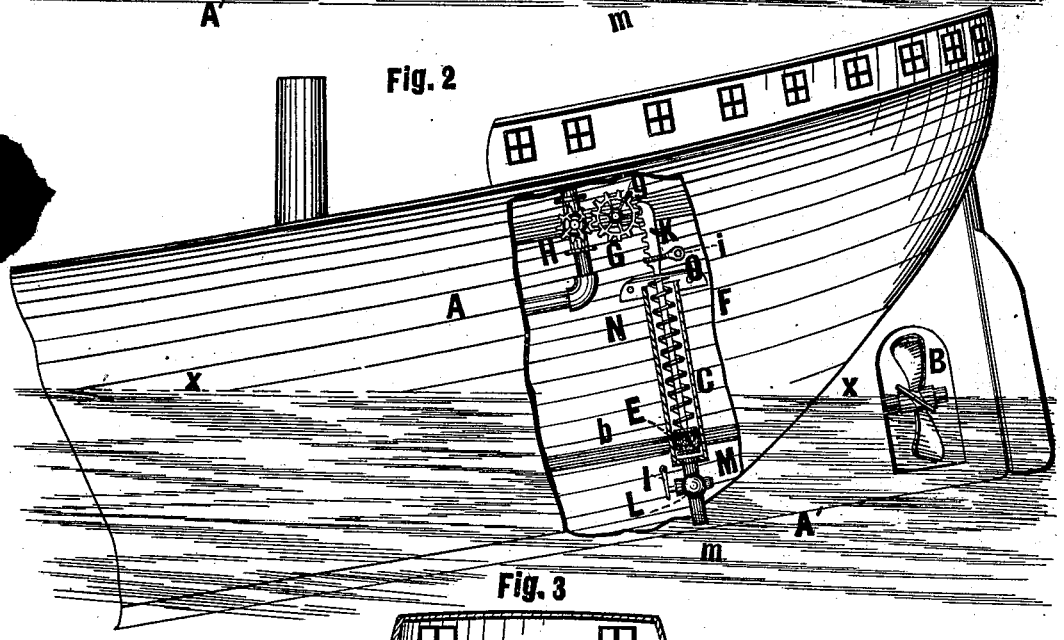
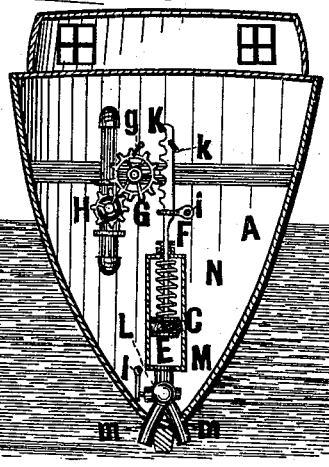


Fig. 3



Witnesses.

R. H. Mitchell

W. R. Edelen

Inventor.

Marcus Hulings

By his atty

James L. Bozé

UNITED STATES PATENT OFFICE.

MARCUS HULINGS, OF OIL CITY, PENNSYLVANIA.

IMPROVEMENT IN MARINE GOVERNORS.

Specification forming part of Letters Patent No. **211,738**, dated January 28, 1879; application filed July 19, 1878.

To all whom it may concern:

Be it known that I, MARCUS HULINGS, of Oil City, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Governors for Steam-Vessels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which they appertain to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 represents a side elevation of a steamship with a part broken away, exhibiting the governor with the throttle open; Fig. 2, the same view with the governor closed. Fig. 3 is a transverse section of the vessel, showing the pipes by which the water enters and operates the governor.

My invention is an improved governor to regulate the admission of steam to the engine of a steam-vessel, and thus prevent racing.

A represents the hull of a steam-vessel, provided with a screw, B, with its shaft *b*. C is a cylinder or well in the hull, having a tube, M, which, by means of its bifurcations *m m*, allows free access of the water to the well C. As these inlet-pipes are placed in the stern of the vessel, it is evident that when the vessel pitches so as to raise the screw from the water, as in Fig. 2, the water-level in the well will be lowered; but when the screw is fully submerged the water will stand at a comparatively high point in the well C.

In the well C is a piston, E, properly packed, so as to be water-tight. Its rod F passes through its guide O.

On the upper end of the rod F is the rack K, which engages with a toothed wheel, G, which meshes with a toothed wheel on the pinion H of the throttle-valve, so that an upward motion of the piston E will close said throttle-valve and a downward motion will open it.

Communication of the motion of the piston E may be made with the throttle-valve in any desired way, as it may be necessary in some cases to have the governor at some considerable distance from the throttle.

A spiral spring, N, resting at one end on the bracket O, and at the other on the piston E, keeps the piston E pressing against the water, and when the water leaves the well C said spring N immediately presses the piston E down, and thus closes the throttle.

The rack K is kept in gear with the idler G by means of the spring *i*, and the rack has a handle, *k*, by which it can be moved in or out of gear by turning the piston and rack at right angles.

The cock L is used when for any reason the water needs to be cut off from the governor, or its communication therewith obstructed.

The well C can be made with a stuffing-box, F, as shown in Fig. 3, or open and projecting above the water-line, as in Figs. 1 and 2.

The spring N can be substituted by any elastic substance; or the piston E may be made sufficiently heavy to promptly fall, by its own weight, when unpressed by the water beneath it.

I do not claim regulating and controlling the supply of steam admitted to the cylinder of a marine engine by the varying pressure of the water caused by the varying depths to which the vessel may be immersed; neither do I claim the devices employed by me for the purpose separated from the combination and arrangement in which I use them; but

I claim—

In a governor for a steam-vessel, the combination of the well C, provided with a piston having a piston-rod surrounded by a spring, the rack K upon said piston-rod operating the throttle-valve mechanism G H, said rack being provided with a handle, *k*, by which it can be turned in and out of gear, and the spring *i*, to retain it in either position, all arranged to operate substantially as shown and described.

MARCUS HULINGS.

Witnesses:

R. H. MITCHELL,

W. R. EDELEN.