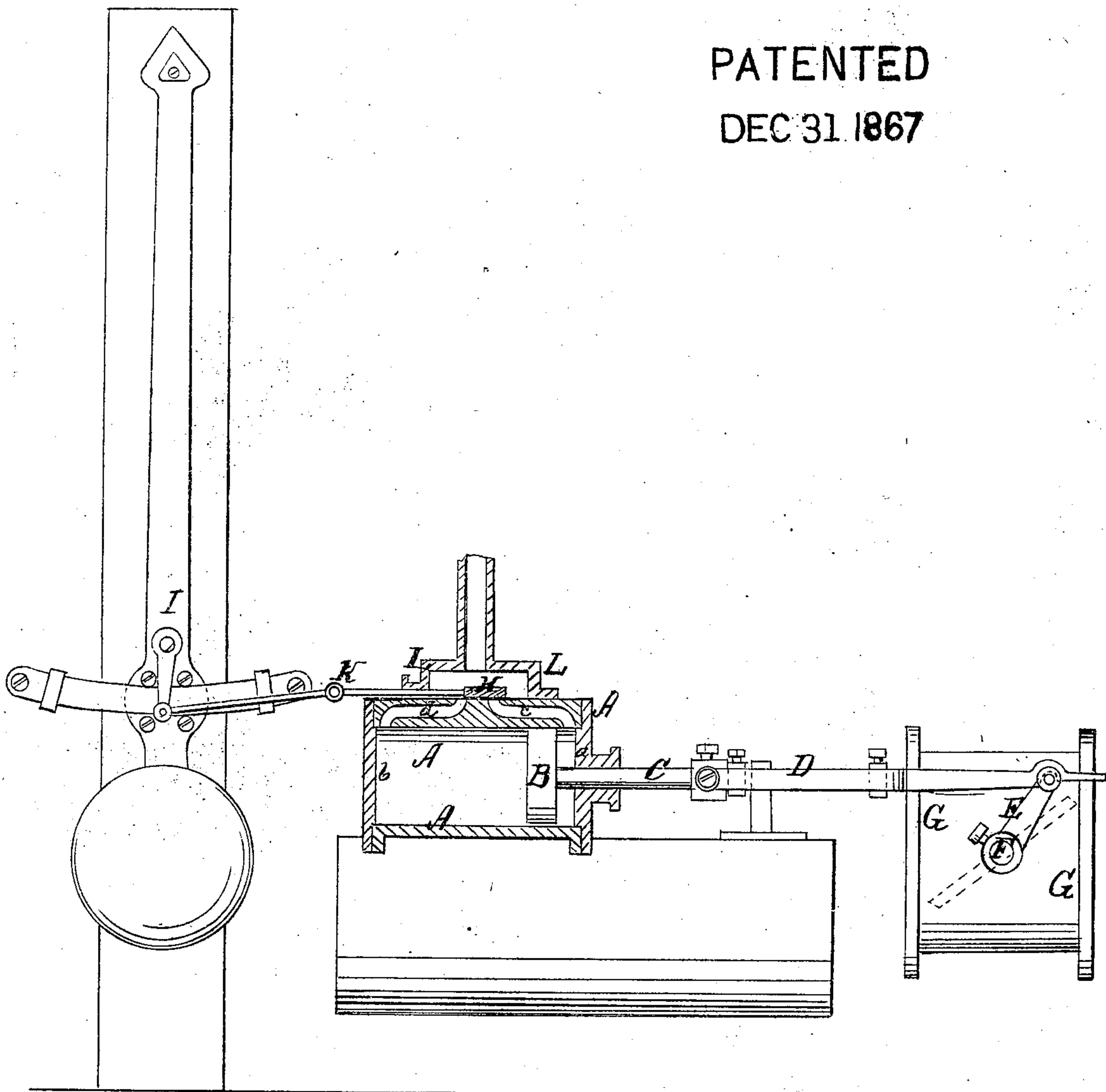


72939

Edward M. Troth's Imp^d Marine Governor.
Assigned to Self and John A Secor

PATENTED

DEC 31 1867



Witnesses.
Theo Truett
Wm Brewin

Inventor:
Edw M Troth
Per Wm M D
Attorneys

United States Patent Office.

EDWARD M. TROTH, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND
JOHN A. SECOR, OF THE SAME PLACE.

Letters Patent No. 72,939, dated December 31, 1867.

IMPROVEMENT IN MARINE STEAM-ENGINE GOVERNORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, EDWARD M. TROTH, of the city, county, and State of New York, have invented a new and improved Governor for Marine Steam-Engines; 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 make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which the drawing represents a front elevation, partly in section, of my invention.

The object of this invention is a device by means of which the supply of steam to an engine on a propeller-steamship will be automatically cut off, whenever the propeller is raised out of the water, to prevent its revolving in the air, and the consequent destruction or injury of the machinery.

The invention consists in a pendulum, connected with the slide-valve of a steam-chest, so that, when the pendulum is brought out of its vertical position and swings towards the bow of the vessel, it will operate the slide-valve, so that the steam will operate upon the piston in a small cylinder, in such a manner that the throttle-valve will be closed.

A represents a small steam-cylinder, in which a piston, B, is arranged, which is provided with a piston-rod, C, as is clearly shown in the drawing. The piston-rod is connected to a rod, D, which operates a crank, E, of a valve, F. The latter is arranged in the steam-supply pipe G of the steam-engine. The cylinder A is so placed in the vessel, in which the whole machine is arranged, that its head, *a*, (in which the packing-box is,) is nearest the stern of the ship, while the opposite head *b* is nearer the bow of the same. When the piston stands close to the head *a*, the throttle-valve will be open, while the same will be closed when the piston-rod is drawn in and the piston touches the head *b* of the cylinder. L is a steam-chest, arranged above the cylinder, as shown. Two parts, *c* and *d*, connect the steam-chest with the ends of the cylinder A. H is a slide-valve in the chest L, by which the passage of the steam through the ports is regulated. This valve is connected with a pendulum-rod, I, by a jointed bar, K, as is clearly shown.

The pendulum-rod is pivoted at its upper end to a stationary frame in the vessel, and when it hangs perpendicular, the valve H will cover the port *c*, and admit the steam into the cylinder through the port *d*. The piston is thereby forced towards the head *a*, and the throttle-valve is open, whereby the machinery is kept running. Should the bow of the vessel be raised out of the water, and the screw be the deeper immersed in the same, the pendulum will swing towards the stern of the vessel, thereby moving the valve H in the same direction, the port *c* will thereby be still kept closed, and the port *d* open, and consequently the throttle-valve will be kept open. But when the screw of the ship is raised out of water, the pendulum will swing forward and will pull the valve, so as to cover the port *d* and admit steam into the cylinder A through the port *c*. The piston will thus be forced towards the head *b*, and the throttle-valve will be closed. The supply of steam to the driving-engine will thus be stopped, as soon as the screw is out of the water, and will be at once restored when the pendulum reaches its perpendicular position.

I am aware that pendulums for stopping the engines, when the screw of a steamship is raised out of water, have been used, but the pendulum can hardly be made heavy enough to close by its own direct action the throttle-valve of a steam-supply pipe on a large ship's engine. It is thought strong enough, without being very heavy, to move the balanced slide-valve in a small steam-chest, and the action of the steam upon the piston will be sufficiently powerful to open or close the throttle-valve, as the case may be.

I do not claim the pendulums for the purpose of closing the throttle-valve of a ship's engine, but

I do claim, and desire to secure by Letters Patent—

The combination of the pendulum I with the slide-valve H, steam-chest L, steam-cylinder A, and piston B, and with the piston-rod C, and connecting-rod D, all made and operating substantially as and for the purpose herein shown and described.

EDWARD M. TROTH.

Witnesses:

WM. F. McNAMARA,

ALEX. F. ROBERTS.