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MARINE ENGINE STOP AND CONTROL VALVE.

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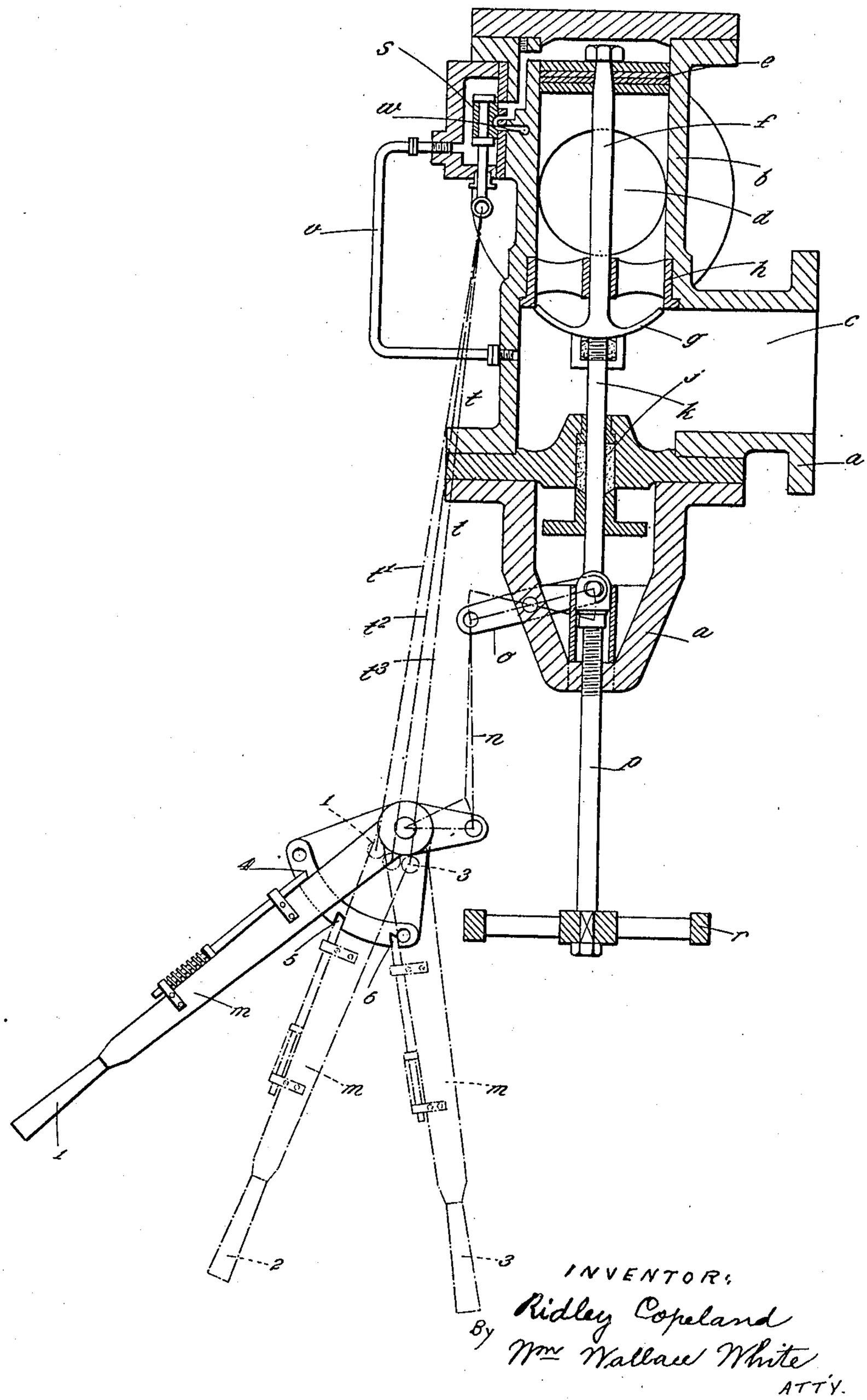
1,298,298.

Patented Mar. 25, 1919.



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MARINE-ENGINE STOP AND CONTROL VALVE.

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Application filed September 16, 1918. Serial No. 254,199.

To all whom it may concern:

Be it known that I, RIDLEY COPELAND, of Joan street, Wallsend-on-Tyne, in the county of Northumberland, England, subject of the King of Great Britain and Ireland, have invented certain new and useful Improvements in or Relating to Marine-Engine Stop and Control Valves, of wihch the following is a specification.

This invention relates to marine engine stop and control valves. The object of this invention is to provide an improved stop and control valve.

A stop and control valve made in accordance with this invention comprises a casing, in which is formed a cylinder closed at one end and open to the casing at the other end, a piston adapted to work in said cylinder, the piston rod of said piston forming the stem of the main valve which is adapted to close the open end of the cylinder, a steam inlet to said casing, a steam outlet from the cylinder to the engine, means for admitting steam from the casing to the back of the piston, means for shutting off the steam to the back of the piston, means for moving the main valve to open and close the open end of the cylinder, and means for keeping the valve in its closed position. Means are provided for the steam to be admitted to the back of the piston by the lever or other means which operates the main valve, so that when said lever or other means is moved from its closed position to an intermediate position, steam is admitted to the back of the piston, whereby the main valve is converted from a loaded valve into an equilibrium valve whereupon the main valve can then be moved to any desired position with as much ease as an ordinary throttle valve and can be closed rapidly by moving the lever or other means back to the intermediate position. A further return movement of the lever or other means shuts off the steam to the back of the piston, whereupon the valve becomes a loaded valve.

The drawing filed herewith is a diagram of one form of valve made in accordance with this invention.

a is a casing provided with a cylinder *b* having a steam inlet *c* and steam outlet *d*. In the cylinder is a piston *e*. The piston rod *f* forms the stem of a valve *g* adapted to close the open end of the cylinder *b*. On the end of the cylinder *b* is a guide *h*. In the casing *a* is a stuffing box *j* through which passes a spindle *k* loosely connected to the valve *g*. The spindle *k* is adapted to be operated by a lever *m* through the link *n* and lever *o*. In the casing *a* is a screwed rod *p* adapted to be operated by a handle *r* to bear on the spindle *k* to close the valve *g* on to the end of the cylinder *b*. In the side of the cylinder *b* is a slide valve *s* adapted to be operated by the lever *m* through the link *t*. From the casing *a* steam is admitted by a pipe *v* to the back of the slide valve *s*. The handle *m* is shown in three positions marked 1, 2 and 3, notches 4 and 5 in the section 6 corresponding with the positions 1 and 2. The link *t* is shown in the three positions corresponding with the positions of the lever *m* by reference letters t', t^2, t^3, the valve *s* being open in the positions t^2 and t^3. The back of the piston *e* is adapted to be put into connection with the main condenser through the pipe *w* when the slide valve closes the port to admit steam.

In operation, assuming the parts to be in the closed position as shown in the drawing, the handle *r* is turned to draw the rod *p* away from the spindle *k*, the lever *m* is moved from position 1 to the position 2, whereupon the valve *s* is opened and steam admitted to the back of the piston *e*. The valve *g* is then in equilibrium, whereupon it can be easily opened to any position between shut and fully open by moving the handle *m* between the positions 2 and 3 and this opening can be regulated in the manner of a throttle valve to regulate the steam to the engine. The valve can be closed rapidly by moving the lever *m* from the positions 3 to 2 and on moving it back to 1 the steam to the back of the piston *e* is shut off and the valve *g* becomes a loaded valve. The valve can be held in position and permanently shut by screwing the rod *r* to bear on the spindle *k*. By setting the position of the screwed rod *r* the limit to which the main valve can be opened can be predetermined.

What I claim as my invention, and desire to secure by Letters Patent, is:

A stop and control valve comprising a casing, a cylinder in said casing, said cylinder being closed at one end and open to the said casing at the other end, a valve adapted to close the said open end of the cylinder, a piston adapted to work in said cylinder, the piston rod of said piston forming the stem of said valve, a steam inlet to said casing, a steam outlet from the cylinder to the engine,

means for admitting steam from the casing to the back of the piston, means for shutting off the steam to the back of the piston, means for moving the said valve, means for keeping the valve in its closed position, said means for moving the said valve comprising an operating lever and a link connection, and said means for admitting steam to the back of the piston comprising a slide valve and a link connection with the said operating lever, the arrangement being such that the said slide valve can be opened and closed by the initial movement of said operating lever, the said valve being regulated by the secondary movement of the said operating lever without moving said slide valve.

In witness whereof, I have hereunto signed my name.

RIDLEY COPELAND.

Witnesses:
H. NIXON,
ERNEST H. YATES.