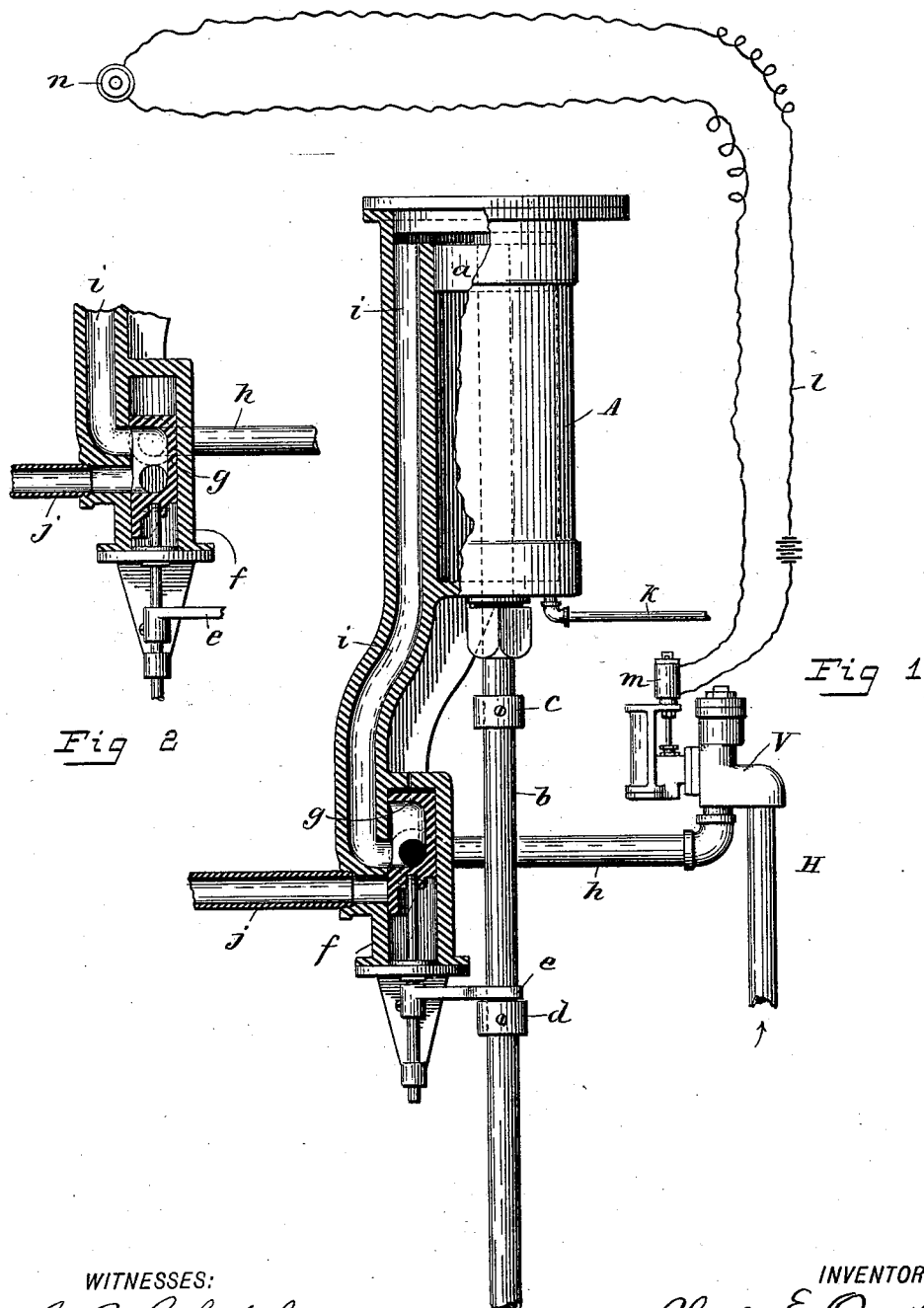


(No Model.)

C. E. ONGLEY.
AUTOMATIC PISTON RETURNING DEVICE.

No. 508,044.

Patented Nov. 7, 1893.



WITNESSES:
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UNITED STATES PATENT OFFICE.

CHARLES E. ONGLEY, OF NEW YORK, N. Y.

AUTOMATIC PISTON-RETURNING DEVICE.

SPECIFICATION forming part of Letters Patent No. 508,044, dated November 7, 1893.

Application filed May 18, 1893. Serial No. 474,649. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. ONGLEY, a citizen of the United States, residing in the city, county, and State of New York, have invented Improvements in Automatic Piston-Returning Devices, of which the following is a specification.

This invention relates to automatic piston returning devices, that is, to devices or apparatus in which after a piston has been moved forward by steam, or other fluid, to do its work, at the close of the stroke, the piston is at once retracted to the end of the cylinder from which it was first moved, so as to be in position for a subsequent operation, it being understood that the work, or at least the main work, of the piston is done by its movement in one direction only.

My invention is specially applicable to marine engines but may be used in other relations.

The invention consists in the apparatus, hereinafter described and set forth in the claims, for accomplishing the result indicated.

In the drawings, Figure 1 is a side view, partly in section, of the preferred form of my device, and Fig. 2 is a sectional view showing one of the valves in the position which it occupies when it has been moved forward.

A, is a cylinder, in which is a piston *a*, having a rod *b* extending to the outside of the cylinder and adapted to actuate any suitably arranged device, no such device, however, being shown since it is not a part of my invention. The cylinder has but a single part at the end of a pipe *i* leading into it.

c, *d* are adjustable collars carried on the piston-rod and adapted to strike the arm *e*, which is fixed on the stem *f* of a three-way or other suitable valve *g*. The collars are so fixed that when the piston is in its retracted position, as shown in Fig. 1, the valve *g* is raised by collar *d*, bringing a steam supply-pipe *h* in communication with the pipe *i*. When the piston and rod move outward, the collar *c* is brought against arm *e*, moving valve *g*; cutting off communication with the steam pipe and opening communication with the exhaust pipe *j* as shown in Fig. 2. The parts *c*, *d* and *e* form, therefore an operating

connection between the valve *g* and the piston. The inlet steam pipe *h*, with the valve *g* in the position shown, (in Fig. 1) communicates with the pipe or passage *i*, leading to the cylinder A, above the piston, and the exhaust-pipe *j*, or pipe leading to a vacuum pump or other exhausting device is cut off. Ordinarily steam will be admitted to pipe *h* for a moment at a time only, when it is desired to effect an operation of the device. This may be done by connecting pipe *h* with the steam pipe H through an electrically controlled valve V, which may be constructed as shown in my Patent No. 443,789, dated December 30, 1890, or otherwise.

l is a circuit leading from the valve operating magnet *m* to a point more or less distant where there is a circuit closer *n*.

k is a small pipe leading from the bottom of the cylinder A to conduct away air forced out by the piston.

In using the apparatus, the circuit-closer is operated, opening valve V, allowing steam to pass from pipe H through pipes *h* and *i* to the cylinder, forcing the piston forward to do its work. Before it reaches the limit of its movement, collar *c* strikes arm *e*, moving the valve *g* so as to disconnect pipes *h* and *i* and to connect the pipe *i* with the pipe *j* of the vacuum pump; this exhausts the cylinder above the piston, and thereby automatically returning the piston to operative position for a subsequent use.

This automatic device is very simple in construction and is not liable to get out of order.

Evidently other devices than the collars *c*, *d* can be used to operate the valve and that other details of the apparatus may be changed without departing from my invention.

Having described my invention, what I claim is—

1. The combination of a cylinder, a piston operating therein, a passage *i* leading to only one end of said cylinder, an inlet pipe *h*, an exhaust pipe *j*, a valve for opening communication between the inlet pipe *h* and the cylinder or between the exhaust pipe *j* and said cylinder, abutments on the piston rod and means substantially as described connected with the valve and adapted to con-

tact with the said abutments to shift the valve, all arranged substantially as and for the purposes specified.

2. The combination of a cylinder, a piston
5 operating therein, a passage *i* leading to only one end thereof, an inlet pipe *h* an exhaust pipe *j*, a valve for opening communication between the inlet pipe *h* and the cylinder or
10 der, adjustable collars *c d* on the piston rod

and means substantially as described connected with the valve and adapted to cooperate with the said collars *c d* to shift the valve, all arranged substantially as and for the purposes specified.

CHARLES E. ONGLEY.

Witnesses:

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HARRY M. TURK.