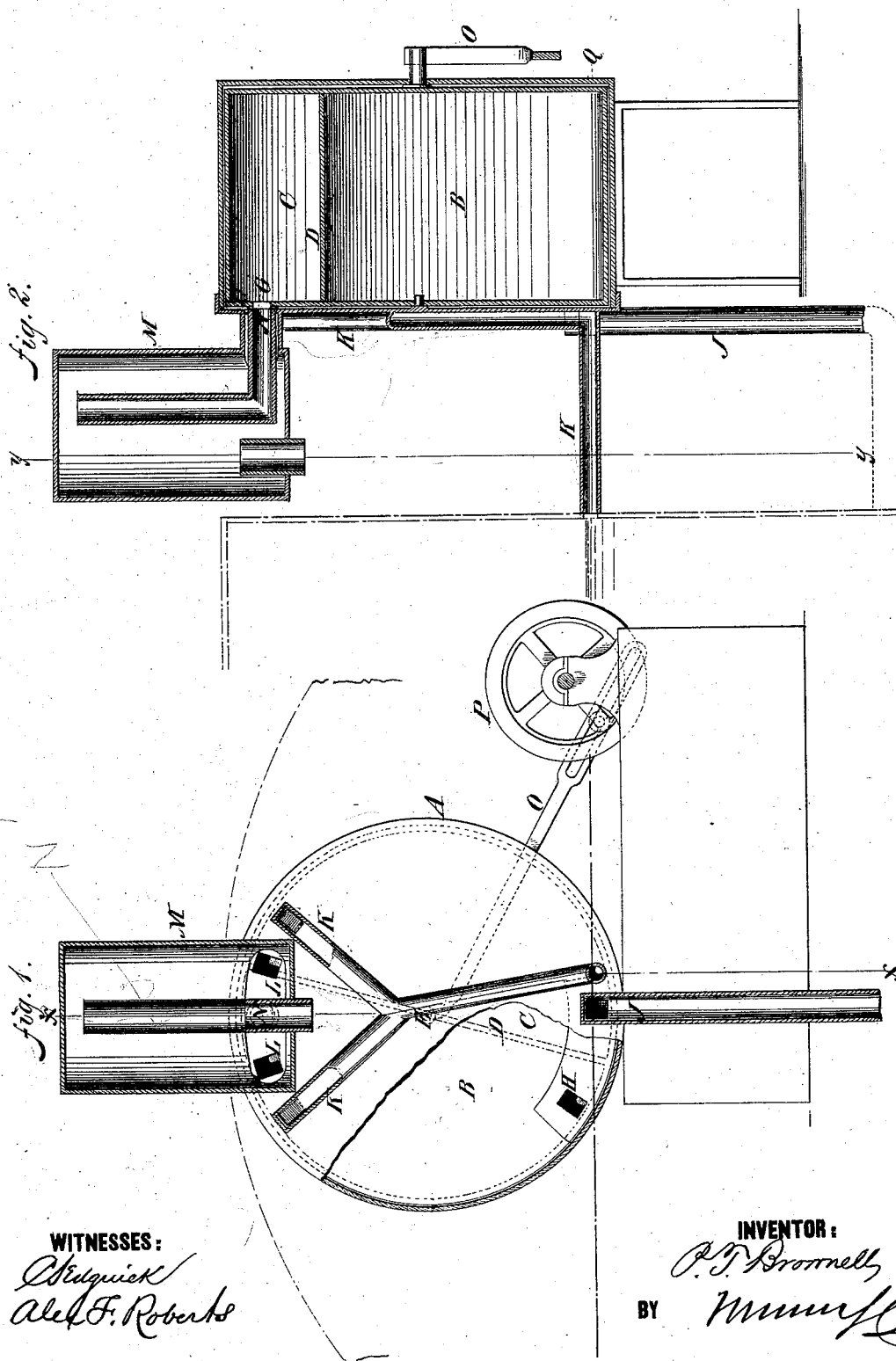


P. T. BROWNELL.

Boiler-Feeders.

No. 155,004.

Patented Sept. 15, 1874.



WITNESSES:

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PHILIP T. BROWNELL, OF ELMIRA, NEW YORK.

IMPROVEMENT IN BOILER-FEEDERS.

Specification forming part of Letters Patent No. 155,004, dated September 15, 1874; application filed July 18, 1874.

To all whom it may concern:

Be it known that I, PHILIP T. BROWNELL, of Elmira, in the county of Chemung and State of New York, have invented a new and Improved Boiler-Feeder, of which the following is a specification:

My invention consists of a double-chambered hollow cylinder or drum, having a slow oscillatory movement imparted to it by any suitable connection with the operating-gear of the engine, whereby ports in the chambers are alternately caused to register with ports in the heater and a feed-pipe to the boiler, also with a steam-pipe connecting with the boiler at the water-level, in such manner that one of the chambers will be receiving water from the heater while the other is being emptied into the boiler by the action of steam admitted through the steam-pipe onto the surface of the water.

Figure 1 is a sectional elevation taken on the line *yy* of Fig. 2. Fig. 2 is a sectional elevation taken on the line *xx* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is a hollow cylinder, divided in two compartments, B C, by the partition D, and oscillating on pivots E, being provided with a port, G, near the top, and another, H, near the bottom of each compartment, with a valve-face at both sets of ports, working steam-tight, the one against the mouth of pipe J, by which the feed-water enters the boiler, and the other against the ends of the branched steam-pipe K, openings L into the heater M, and the openings N into the feed-water pipe.

The drum is oscillated forward and backward by the lever O and cranked wheel P, which are supposed to be operated by the engine or any competent means.

As represented in Fig. 1, the compartment B is represented as receiving water from the pipe N in the heater, while compartment C is receiving steam from pipe K, and discharging its water into the boiler by pipe J. When the

cylinder is next shifted by the lever O, the ports of compartment B will register with pipes J and K, so that the water will flow from it into the boiler, while the ports G of compartment C will register with pipe N to receive the water, and its ports H will be cut off from pipe J. When the ports G pass the openings L into the heater they allow the water of condensation in the heater to flow into the compartments C or D, so that it finds its way into the boiler.

The drum A is inclosed in an outer shell, Q, in which it will be surrounded by steam or hot water admitted to it from the steam-pipe, one of the branches of which is uncovered when the other is registering with the drum, the object being to utilize the steam-pressure for forcing it against the valve-seat, so as to prevent leakage from one port to another. The steam-pipe K connects with the boiler at the water-line, so that, in case the water rises up to and closes the mouth, the feed will stop until the water falls low enough to admit steam to the drum again.

The contrivance is also adapted to work as a steam-trap for steam heating apparatus, and I propose to use it as such.

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

1. The combination of the compartments B C and ports G H of the oscillating drum A with the water-supply pipe N, the branched steam-pipe K, and the feed-pipe J, as and for the purpose specified.

2. The combination of the ports G of the compartments B and C of the oscillating drum A with ports L of the heater M and the water-pipe N, for the purpose of taking off the water of condensation in said heater, substantially as described.

PHILIP T. BROWNELL.

Witnesses:

T. B. MOSHER,
ALEX. F. ROBERTS.