

D. COOK.

WATER REGULATOR AND INDICATOR FOR STEAM BOILERS.  
No. 169,676.

Patented Nov. 9, 1875.

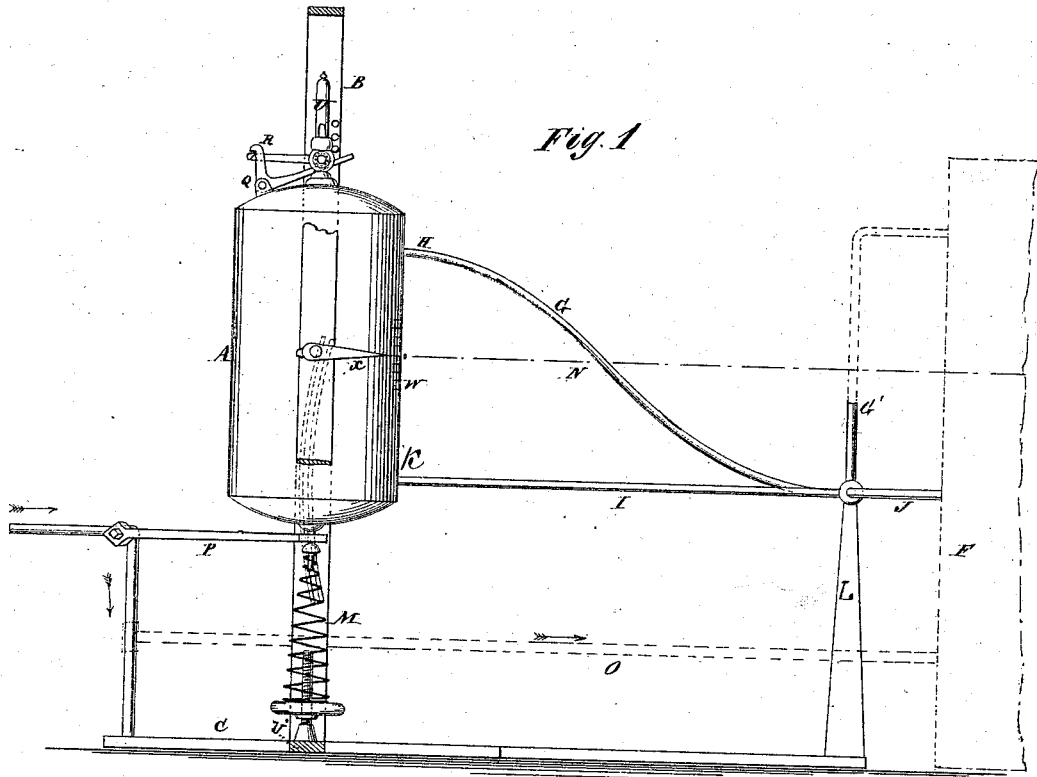


Fig. 1

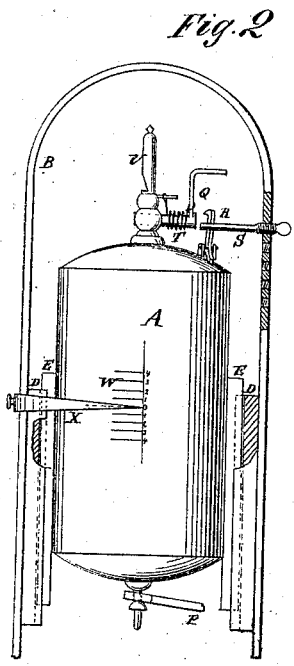


Fig. 2

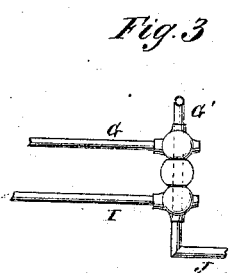


Fig. 3

WITNESSES:  
*A. W. Hargraves*  
*A. J. Terry*

INVENTOR:  
*Dexter Cook*  
BY  
*Munnell*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

DEXTER COOK, OF ELMIRA, OHIO.

## IMPROVEMENT IN WATER-REGULATORS AND INDICATORS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **169,676**, dated November 9, 1875; application filed September 4, 1875.

*To all whom it may concern:*

Be it known that I, DEXTER COOK, of Elmira, in the county of Fulton and State of Ohio, have invented a new and useful Improvement in Water-Regulator and Indicator, of which the following is a specification:

The invention will first be described in connection with drawing, and then pointed out in the claims.

In the accompanying drawing, Figure 1 represents a side elevation of the apparatus. Fig. 2 is an end elevation. Fig. 3 is a detail of the steam and water pipes.

Similar letters of reference indicate corresponding parts.

A represents a water-tank of any desired or suitable form, but preferably cylindrical, as seen in the drawing. This tank is supported in an upright position by the arch B, which arch rests upon a bed-plate or floor, C. The tank rises and falls in the arch, and is guided by curved ways D and ribs on the tank, marked E. F represents a steam-boiler, with which the tank is connected with the steam-space of the boiler by the pipe G', as seen in dotted lines at one end, and with the upper part of the tank, as seen at H, at the other end. I is a water-pipe, connected with the boiler by the pipe J, and with the tank at K.

The pipes G' and J are elbows supported by the stand L. The steam and water pipes G and I slip onto these elbows, and readily turn thereon as the tank rises and falls.

M is a spring of conical or other form, upon which the tank rests. The tank will rise and fall according to the height of water in the boiler. N is the water-line, which indicates the desired quantity of water in the boiler.

The supply-pipe from the force-pump to the boiler is indicated by the dotted lines O. The water will flow from the boiler to the tank through the pipe I, and a uniform level will be maintained. When the water rises above the water-line the increased weight will cause

the tank to fall and operate the lever-wrench P, and shut off some of the water. When the supply of water in the boiler falls short, the diminished weight in the tank will cause the tank to rise, and in doing so the lever P will be operated in the opposite direction, and the water will be let on, so that a constant and uniform quantity will be maintained in the boiler. The valve-lever Q at the top, which is fastened as the valve is closed under the hook R, is tripped by the adjustable screw-rod S and flies up, and as it opens wide the whistle-valve by the reaction of the coil-spring T, an alarm is given by the whistle U.

The tension of the spring M may be varied by means of the hand-wheel V, as may be desired. When the tank is ascending and descending, it carries with it the lever P, which regulates the pump.

W is a graduated scale on the side of the tank. X is a pointer or finger attached to the arch B. If the water-line N coincides with the 0 of the scale, the finger X may be fixed at that point, and will indicate the variations of the tank and the water-supply.

The tripping-rod S is so adjusted in the arch B that the tank will rise and the whistle will be sounded if the pump ceases to do its duty. The stand L may be dispensed with, if desired.

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

1. The combination, with wrench-lever P, of the spring-supported tank A, connected with steam-space of boiler by piping G G', and with water-space by piping I J, as and for the purpose specified.
2. The valve-lever Q, hook R, spring T, and tripping-rod S, for the purposes described.

DEXTER COOK.

Witnesses:

NATHAN WEST,  
ADAM BRITSCH.