

J. D. Otis,

Boiler Feed Water Apparatus.

No. 86,580.

Patented Feb. 2, 1869.

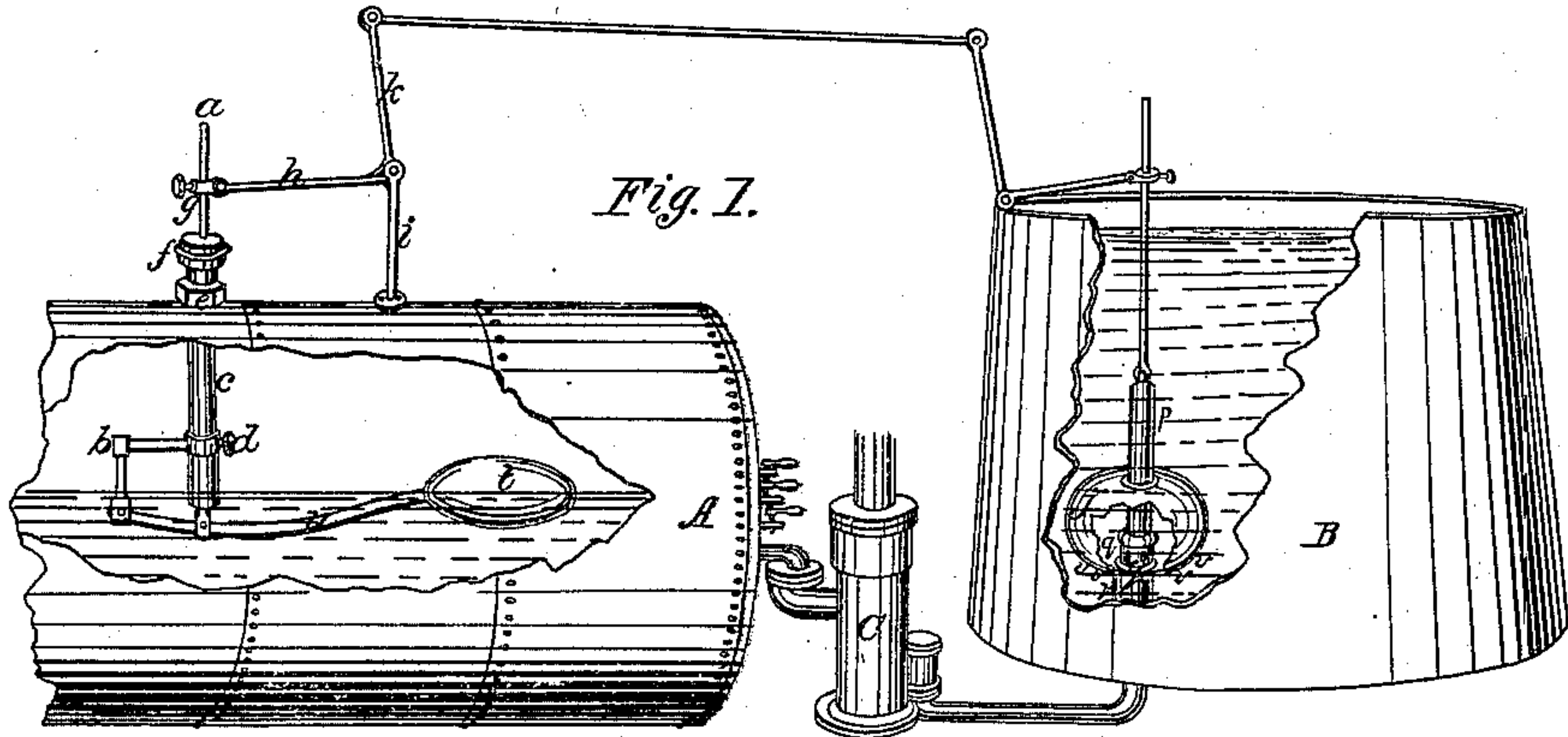


Fig. 1.

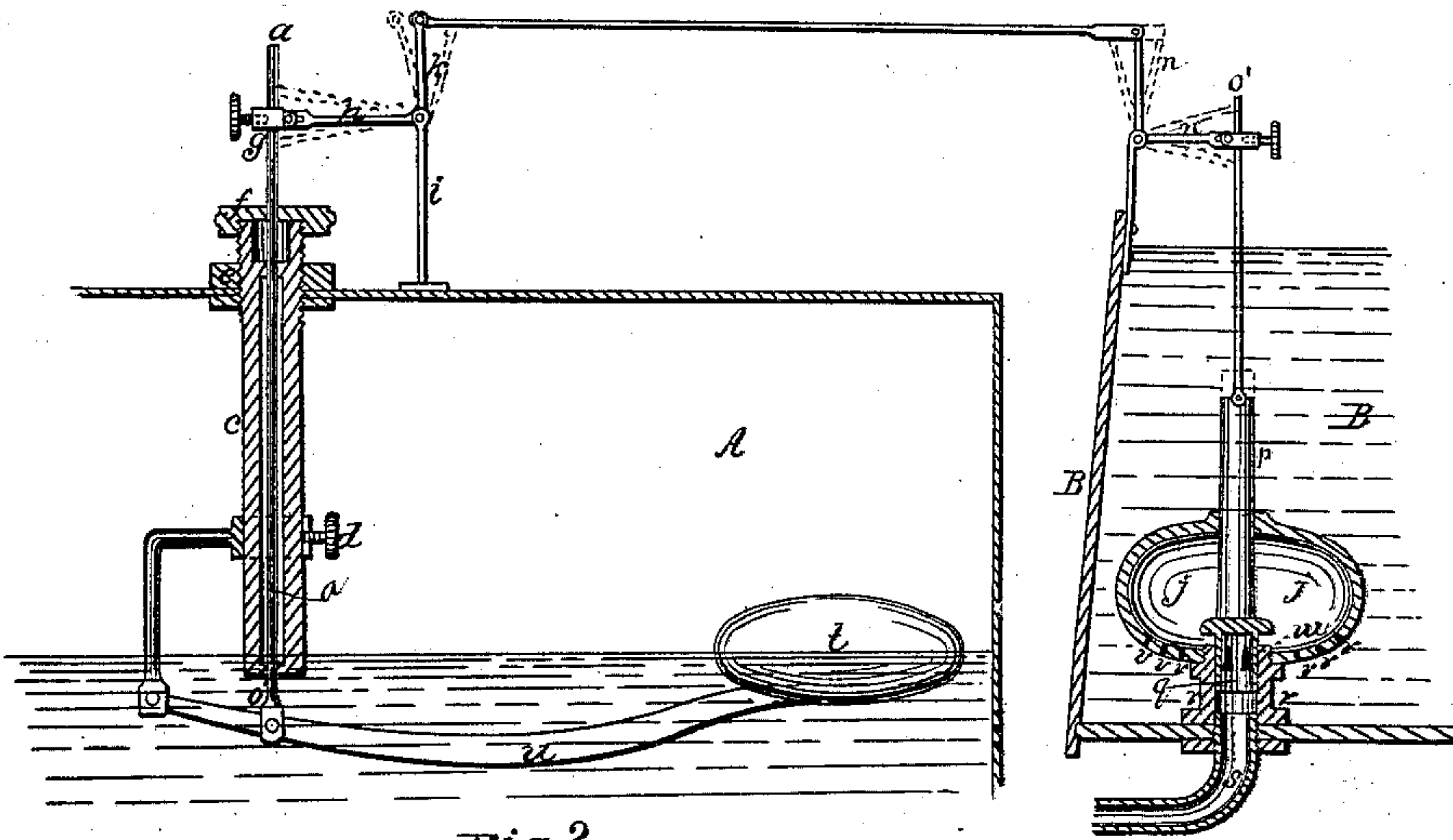


Fig. 2.

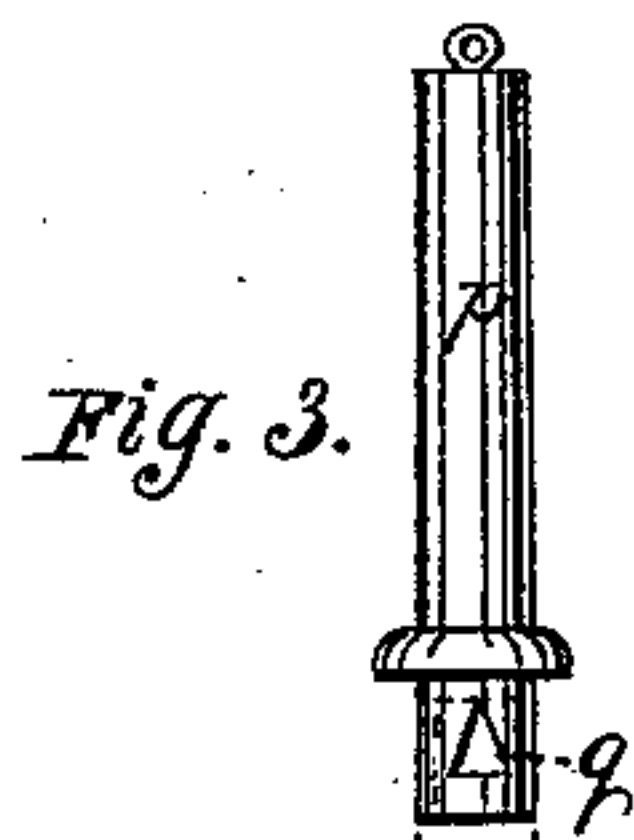


Fig. 3.

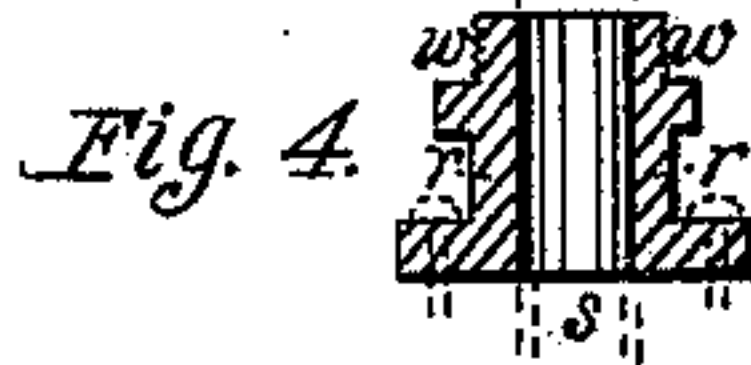


Fig. 4.

Witnesses
Lewis H. Heyon,
E. H. Collins

Inventor
John D. Otis.



JOHN D. OTIS, OF PEORIA, ILLINOIS.

Letters Patent No. 86,580, dated February 2, 1869.

IMPROVEMENT IN FEED-WATER DEVICES FOR BOILERS.

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, JOHN D. OTIS, of the city of Peoria, in the county of Peoria, and State of Illinois, have invented a new and improved Mode of Regulating the Supply of Water in Steam-Boilers, to obviate the dangers of explosion, and all other difficulties that may arise by there being too much or too little water; (the principal object is to regulate the flow of water to a steady gauge;) and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1. Letter A represents a steam-boiler.

Letter B represents a water-tank.

Letter C represents a force-pump, with pipes connected with valves in water-tank and boiler.

Figure 2. Letters P, *w w*, and *r r*, represent the valve and valve-seat.

q, the V-openings, of which there are three, that the water has to pass through to the heater or pump, through pipe S.

J J is a cap, or bonnet, that covers the valve P, and protects it from all sticks or stones that might accidentally get in the tank B. It also forms a strainer, being perforated with three or four rows of small holes around the under side *v v v*, to admit the water to the valve P.

O is a rod, connected to the upper end of the valve-stem, and leading to crank *m n*, where it is fastened by means of a set-screw, so as to raise or lower it, as occasion may require.

l is a rod that connects the two cranks together.

a is a small brass rod connecting with rod *h* and lever *u*.

Rod *a* passes down through pipe C, which is connected to boiler by means of two lock-nuts.

On upper end of pipe C there is a stuffing-box, *f*, to pack rod *a*.

The lower end of pipe C is long enough to reach into the water in the boiler, so as to carry a column of water up in pipe C, and around rod *a*, to the packing in stuffing-box *f*, so as to keep the packing free and moist, and clear off the hot steam.

b is an arm that is fastened to pipe C by means of set-screw, the lower end of arm supporting lever *u*.

t represents the float that is attached to the end of the lever, by means of which the valve P in the water-tank is raised and lowered, to regulate the flow of water to the pump.

Figure 3 represents the valve taken out of the seat; P, the stem of the valve; and

q, the openings, there being three.

Figure 4 represents the body of the valve;

w w, the valve-seat, which is square, and a ground joint, so that when the valve is closed it forms a perfectly-tight joint, and shuts the water entirely off.

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

1. The regulating feed-valve P, in combination with the seat *w w*, guide *r r*, and cap J, substantially as set forth.

2. The lubricating water-pipe *c*, with the stuffing-box *f*, constructed substantially as set forth.

3. The arrangement of the float *t*, arms *n* and *b*, the rod *a*, pipe *c*, and stuffing-box *f*, rods *h* and *k*, support *i*, rods *l*, *m*, *n*, and *o*, and valve P, substantially as herein specified.

JOHN D. OTIS.

Witnesses:

EDMUND THURLOW,

CHRISTOPHER C. PALMER.