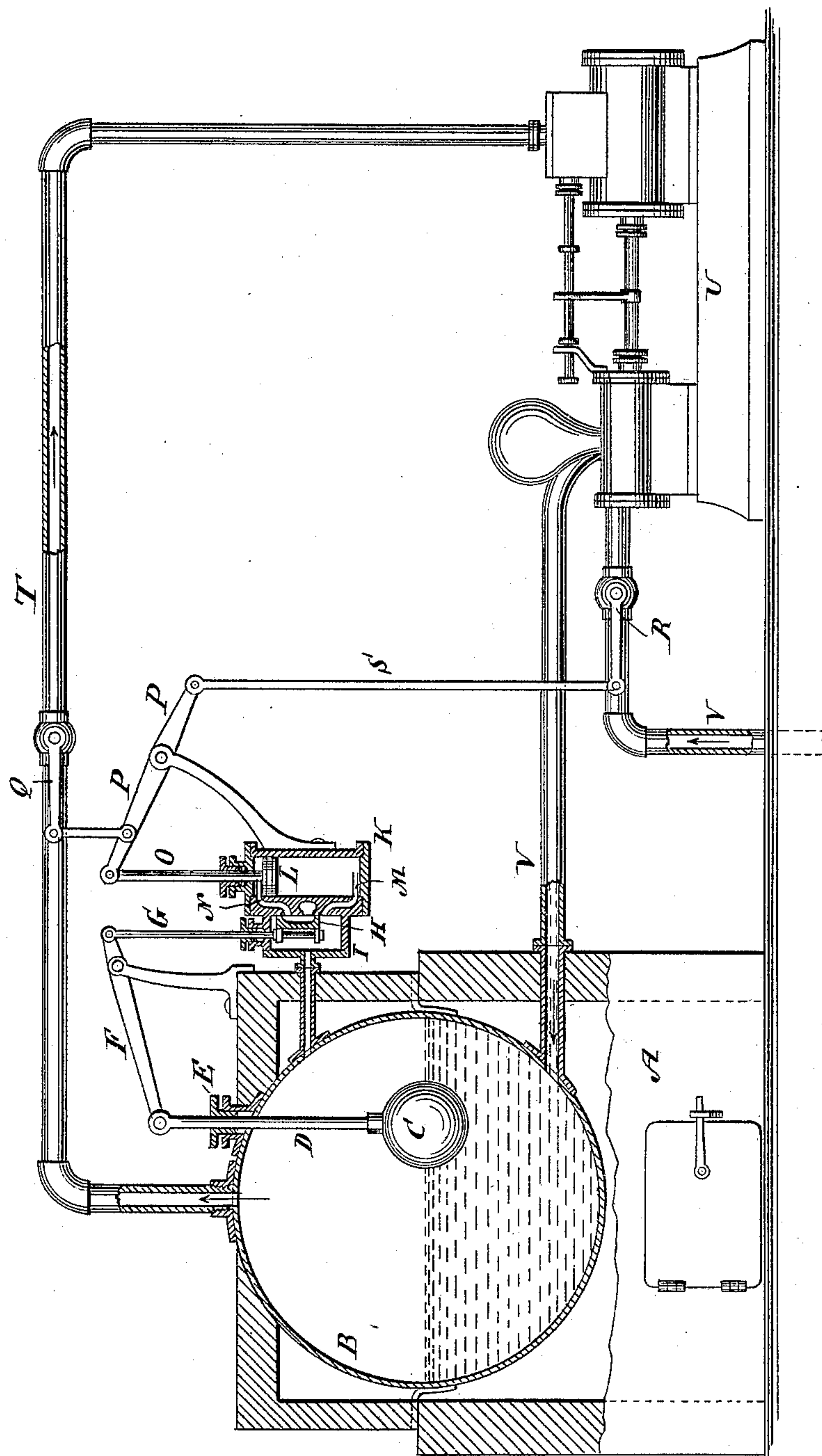


(No Model.)

P. BORN.
BOILER FEED REGULATOR.

No. 405,456.

Patented June 18, 1889.



WITNESSES:

Eduard Wolff.
William Miller

INVENTOR:

Paul Born.

BY *Van Gantwood & Hauff*

ATTORNEY

UNITED STATES PATENT OFFICE.

PAUL BORN, OF NEW YORK, N. Y.

BOILER FEED-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 405,456, dated June 18, 1889.

Application filed January 31, 1889. Serial No. 298,166. (No model.)

To all whom it may concern:

Be it known that I, PAUL BORN, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Boiler Feed-Regulators, of which the following is a specification.

This invention has for its object to provide novel and efficient mechanism for supplying a steam-boiler with feed-water and regulating such supply; and this object I accomplish by the features and combination of devices hereinafter described and claimed, reference being made to the accompanying drawing, in which the figure is a sectional elevation of a boiler and feed-water regulator embodying my invention.

In the drawing, the letter A indicates a furnace or fire-place for the boiler B, having a float C, whose stem D passes through the stuffing-box E and connects with lever F. The lever F is connected to the rod G of the slide-valve H, whose steam-chest I communicates with the boiler B. From the steam-chest I lead ports M N to the cylinder K, having the piston L, whose rod O connects with the lever P. Said lever P is connected to the valve Q, and also by rod S to the valve R. The valve Q is situated in the steam-pipe T, leading from boiler B to the feed-pump U. The valve R is situated in the feed-pipe V, through which the pump U forces water into the boiler B. When the water in the boiler sinks too low, the float C sinks, and the valve H is moved so as to open the port M, whereupon the steam forces the piston L to the position shown in the drawing, thus opening the valves Q R. Steam thus flows to the pump U and sets said pump into operation, forcing

water through the pipe V into the boiler. When the water has risen to a sufficient height in the boiler, the float C is raised so as to cause the valve H to close the port M and open the port N. The piston L is then forced to the other end of the cylinder K, whereby the valves Q R are closed and the pumping operation is stopped. On the water in the boiler sinking too low the pumping operation again begins, and continues until enough water has again been forced into the boiler.

If desired, the cylinder K instead of being outside of the boiler B can be placed inside said boiler.

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

The combination of a boiler, a feed-water pump, a steam-pipe connecting the steam-space of the boiler with the pump for operating the latter, a feed-water pipe connecting the pump with the water-space of the boiler, a valve in the steam-pipe, a valve in the feed-water pipe, a steam-cylinder having a valve-chest connected with the boiler and provided with a movable valve, a float in the boiler having a lever-connection with the valve in the steam-chest, a piston in the cylinder, and a swinging-lever connection between the piston and the valve of the steam-pipe leading to the pump and the valve of the feed-water pipe to simultaneously open and close such valves, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

PAUL BORN.

Witnesses:

PETER BORN,
WILLIAM C. HAUFF.