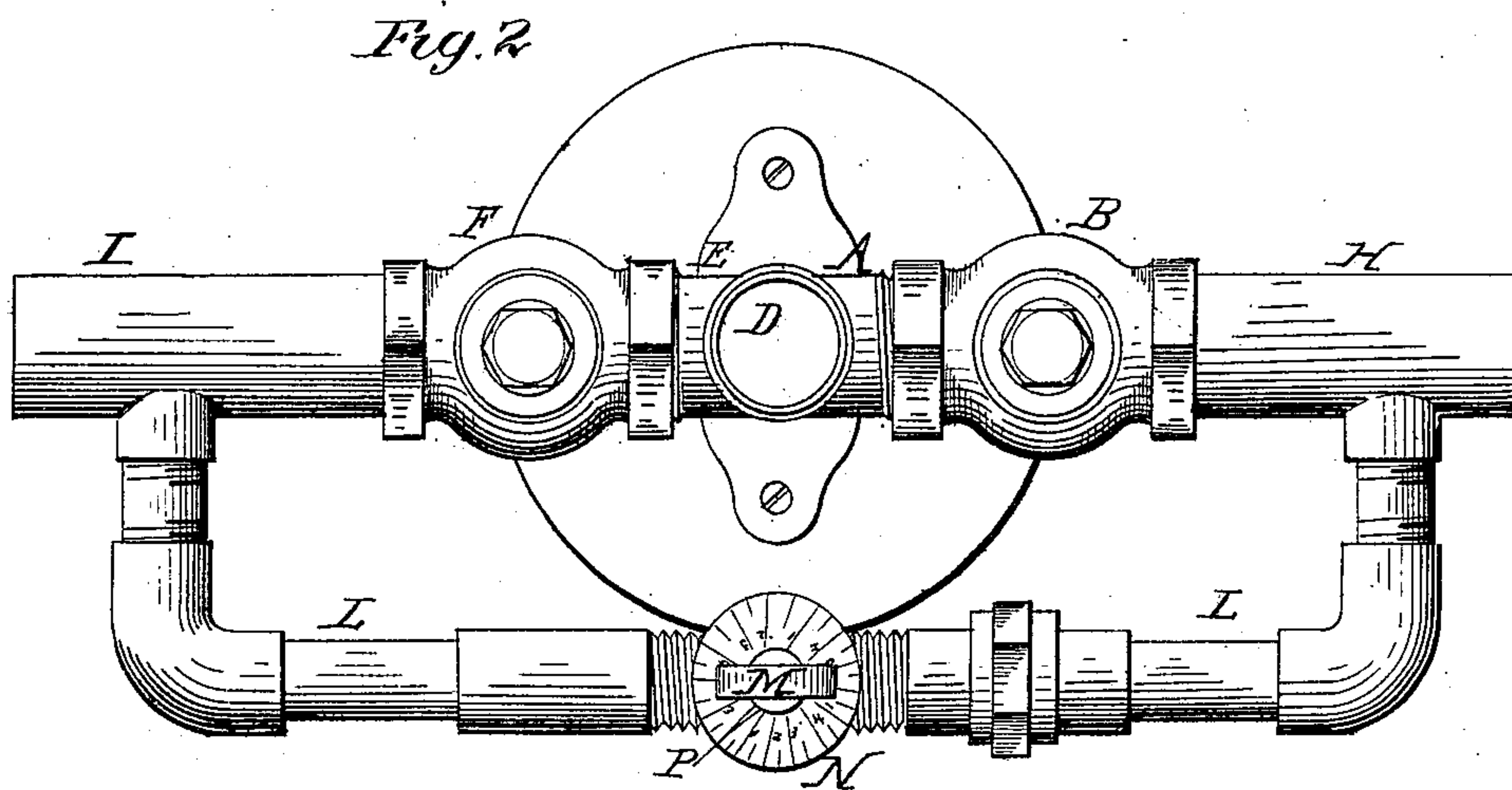
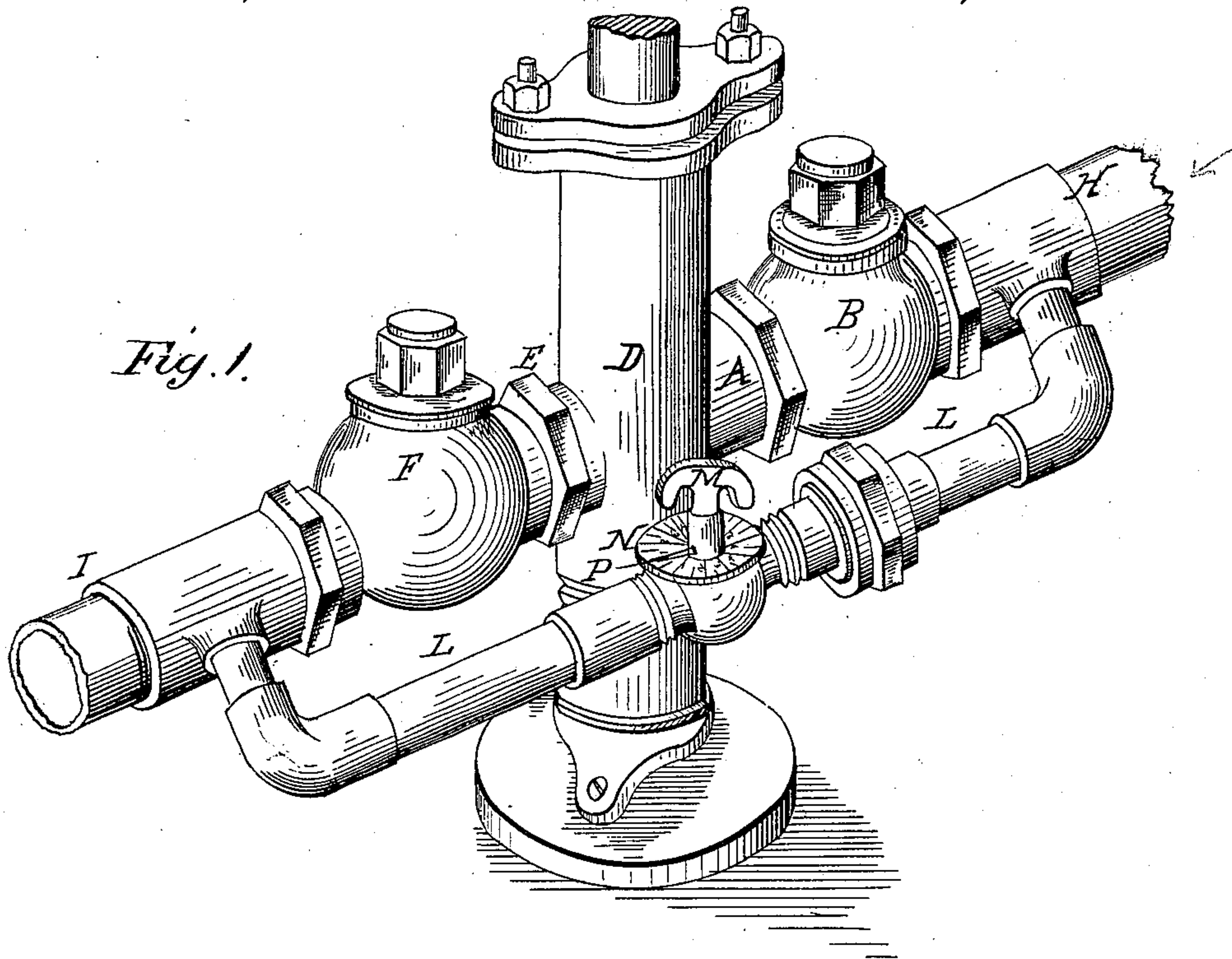


C. MENDENHALL.
Feed-Water Regulator.

No. 200,405.

Patented Feb. 19, 1878.



Witnesses;
Howard Day
Frederick Hornum

Charles Mendenhall Inventor;

UNITED STATES PATENT OFFICE.

CHARLES MENDENHALL, OF CINCINNATI, OHIO.

IMPROVEMENT IN FEED-WATER REGULATORS.

Specification forming part of Letters Patent No. **200,405**, dated February 19, 1878; application filed November 2, 1877.

To all whom it may concern:

Be it known that I, CHARLES MENDENHALL, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Feed-Water Regulators, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improved feed-water regulator; and consists in the devices hereinafter particularly described.

The object of the invention is to afford a device that will silently insure a continuous supply of water to a steam-boiler.

In the accompanying drawings, Figure 1 is a perspective view of a feed-water pumping apparatus embodying my invention. Fig. 2 is a plan of the same.

In the accompanying drawings, A represents the supply-pipe of the pump-barrel, and B the supply or suction valve of the pump, which receives water from the pipe H, leading to the feed-water heater or other source of supply.

The pipe A enters the pump-cylinder D, as shown, and the discharge-pipe E of the pump-cylinder is provided with the usual discharge-valve F, and connected, as shown, with the pipe I, leading to the boilers. The pipe H is connected with the pipe I by the pipe L, provided at the proper place with the indicator-valve M, to which is affixed an index-dial, N, having a graduated scale, there being an index-finger, P, secured to the stem of the valve, so that it may be set to regulate the passage of water through it. The pipe I, at a point near the boilers, is supplied with a check-valve, to prevent the waste of water from the boiler through the indicator-valve M when the pump is stopped.

It is obvious that the supply of water to the boilers is perfectly regulated by the above device, since the pump can work continuously, yet no more water be delivered than is required, all surplus returning through the valve M, the index-finger P having been moved to such position on the dial N as shows the limit of supply desired.

The pump-cylinder D is thus kept constantly full of water, and so the wear and tear upon the pump, as well as the noise occasioned by its working with an empty barrel, or the sudden descent of the plunger upon the water, or the necessity of stopping and then starting the pump, are entirely avoided. Moreover, as there is a continuous flow of water through the heater, the benefit of the same is wholly secured, and a saving of fuel results.

The advantages of the valve M are, that when its key is set it is fixed; that it is not affected by oxidization or by the irregular fluctuation of the water, and thus the boiler receives regularly the supply in the desired quantity.

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

In a pump relief attachment, the pipe L and the indicator stop-valve M, provided with the graduated disk N and index-finger P, in combination with a pump and its check-valves, constructed as described.

In testimony that I claim the foregoing improvement in feed-water regulators, as above described, I have hereunto set my hand this 29th day of October, 1877.

CHARLES MENDENHALL.

Witnesses:

HOWARD DOUGLASS,
FREDERICK HORMAN.