

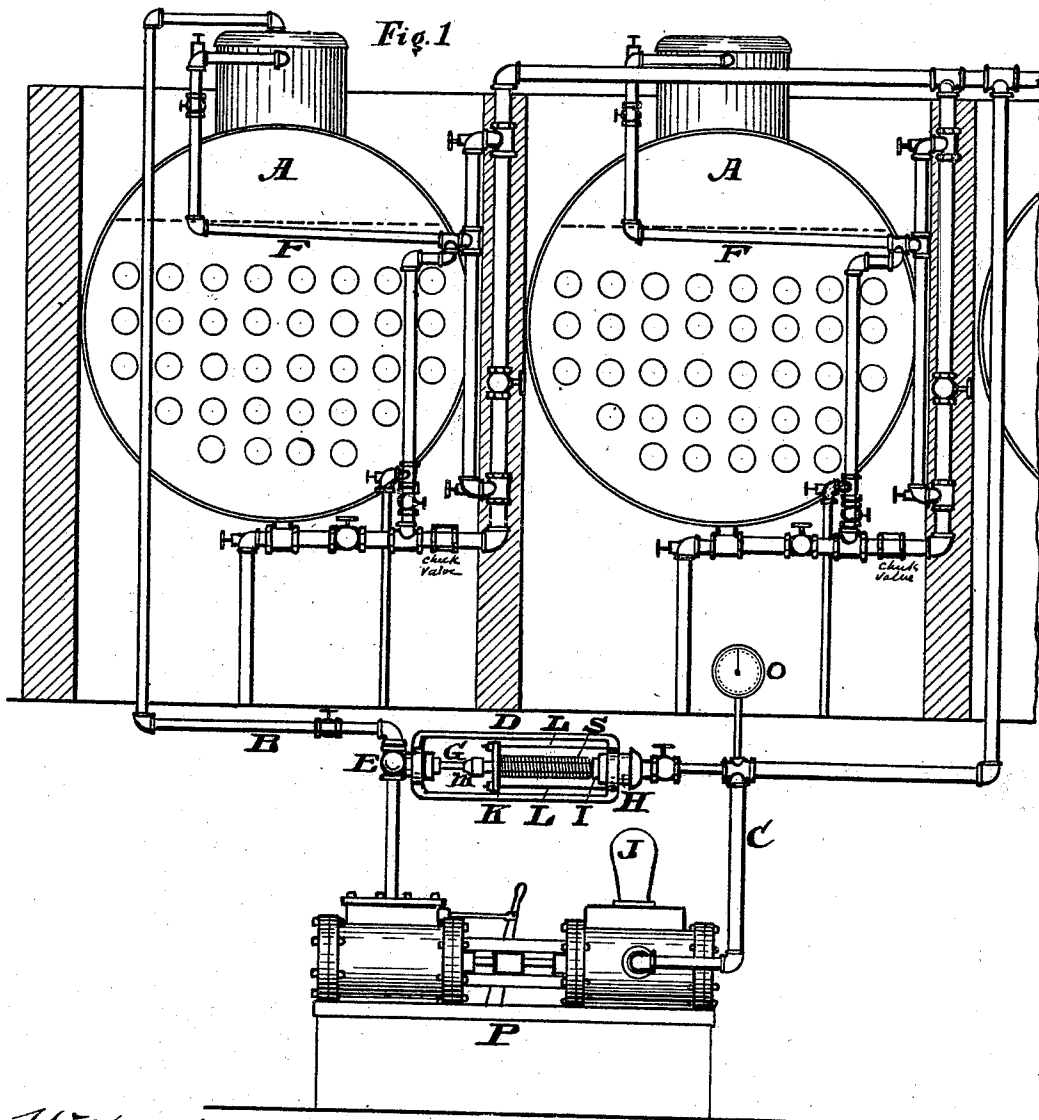
(No Model.)

2 Sheets—Sheet 1.

J. THOMAS.
GOVERNOR FOR FEED PUMPS.

No. 519,360.

Patented May 8, 1894.



Witnesses.

C. A. Army.

E. J. Kahn

Inventor,

Joshua Thomas.
By Attorney Geo. W. Tibbitts.

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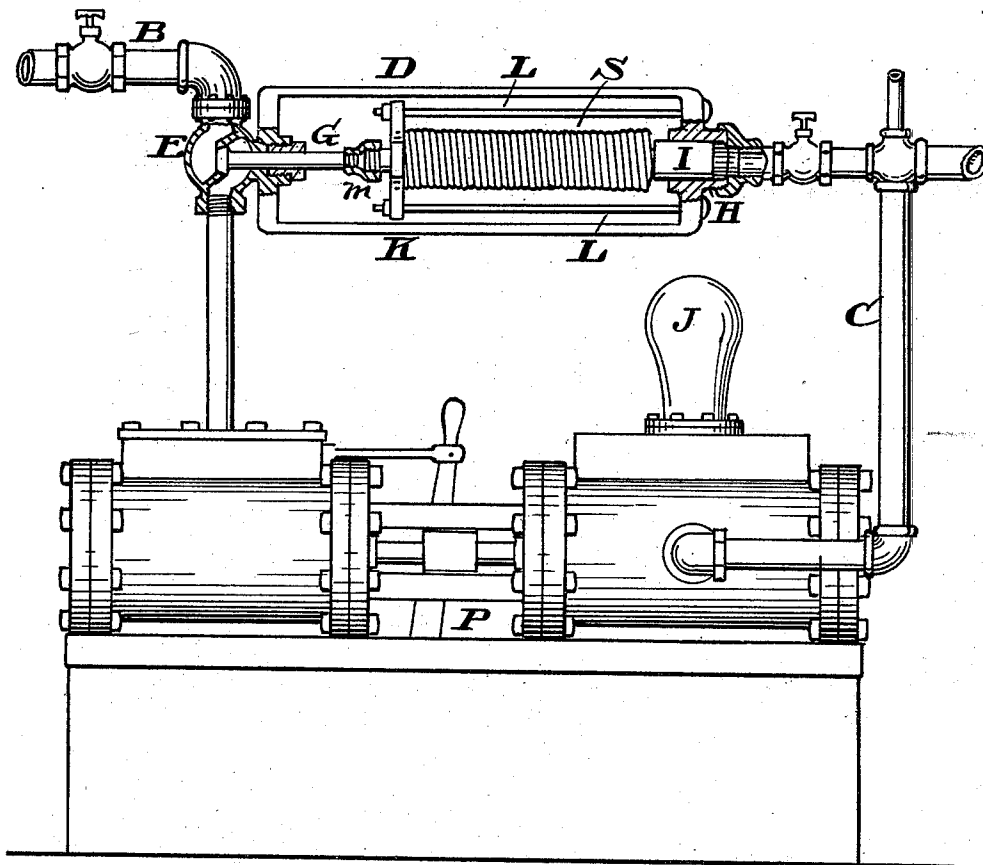


Fig. 2.

Witnesses,
C. M. Curtner,
John C. Talcott

Inventor,
Joshua Thomas,
by Geo. W. Tibbitts, Atty.

UNITED STATES PATENT OFFICE.

JOSHUA THOMAS, OF CLEVELAND, OHIO.

GOVERNOR FOR FEED-PUMPS.

SPECIFICATION forming part of Letters Patent No. 519,360, dated May 8, 1894.

Application filed February 27, 1893. Serial No. 463,844. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA THOMAS, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Governor for Feed-Pumps, of which the following is a specification.

This invention relates to governors for feed pumps, and consists in the construction and combination substantially as hereinafter described and pointed out in the claim.

In the accompanying drawings, Figure 1 is a rear end elevation of two of a battery of boilers showing the pipe connections with the same, and a steam pump having my governor attached. Fig. 2 is a longitudinal section of the governor.

A represents the rear ends of two of a battery of boilers, which may be of any of the well known constructions, and P is a steam pump.

B is a steam pipe between the boiler and the steam chest of the pump engine.

C is the discharge pipe from the pump cylinder to the boiler.

F represents pipes in a feed water regulator for which a patent was granted to me December 27, 1892.

The subject of this application is an automatic pump governor, described as follows:

D is a frame, one end of which is connected with the steam valve E in the steam pipe B, and is provided with a stuffing box, through which the valve stem G passes. In the other end of the frame D is provided a small cylinder H in which is a piston I, its rod joined to valve stem G. The cylinder H is connected by a union and T connection with the discharge pipe C, or it may be connected directly with the air-chamber J, of the pump if desired, as may be most convenient. Between the union and T is provided a throttle valve, for closing said communication when desired. K is a cross-bar on the piston rod, joined to the cylinder end of frame D by rods

L, L, and a spiral spring s is placed on the piston rod between the piston and the said cross bar K. m is a union nut on the piston rod for adjusting the length of the rod and valve stem. O is a gage suitably attached to the discharge pipe or air-chamber, by which the pressure may be readily ascertained.

The valve E and piston I are opposed to each other, so that when the steam pressure and the water pressure are alike, the pump ceases to act, should the water pressure go down the steam pressure will force the valve E open and set the pump going until the water pressure is again raised to equal the steam pressure.

The design of the spring is to give some advantage to the steam valve. By tightening up on the nuts on rods L, L, the spring is forced against the piston head, thereby creating as much or as little water pressure above the steam pressure as desired, and this extra pressure will be maintained following the steam pressure up or down, thus maintaining an even pressure that puts water in the boiler whether the steam is high or low.

Having described my invention, I claim—

The combination in a governor for feed pumps for steam boilers, of a frame D, cylinder H in one end of said frame, piston I in said cylinder actuated by the water pressure from the boiler; valve E attached to opposite end of said frame D and joined to said piston by joint piston rod and valve stem G, said valve actuated by the steam pressure from the boiler in opposition to said water pressure; a cross-head K on said rod G, rods L L connecting said cross-head to the frame D; and springs S on said rod G having its bearings against said cross head and piston, constructed and adapted to operate substantially as and for the purpose set forth.

JOSHUA THOMAS.

Witnesses:

GEO. W. TIBBITTS,
E. JAY PINNEY.