

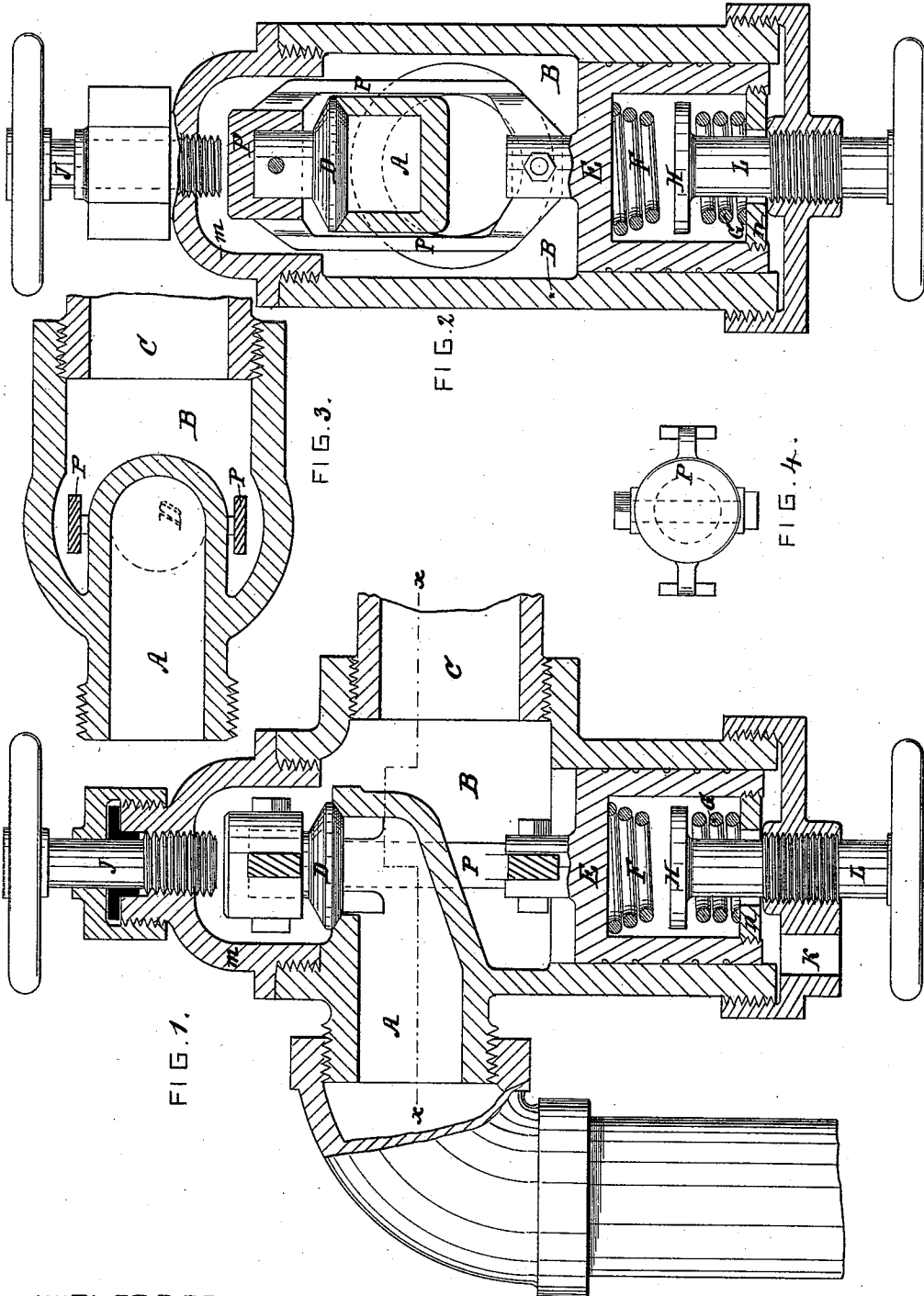
(No Model.)

P. SMITH.

COMBINED STOP AND REGULATING VALVE.

No. 393,180.

Patented Nov. 20, 1888.



WITNESSES,

Wm. H. Lowe
Walter C. Morris

INVENTOR,

Peter Smith.
by his attorneys
Roeder & Briesen.

UNITED STATES PATENT OFFICE.

PETER SMITH, OF NEW YORK, N. Y.

COMBINED STOP AND REGULATING VALVE.

SPECIFICATION forming part of Letters Patent No. 393,180, dated November 20, 1888.

Application filed July 5, 1888. Serial No. 279,013. (No model.)

To all whom it may concern:

Be it known that I, PETER SMITH, of New York city, New York, have invented a new and Improved Combined Stop and Regulating Valve, of which the following is a specification.

This invention relates to an improved combined stop and regulating valve; and it consists in the various features of improvement more fully pointed out in the claim.

In the accompanying drawings, Figure 1 represents a vertical section of my improved valve. Fig. 2 is a vertical cross-section; Fig. 3, a horizontal section at line *xx*, Fig. 1; and Fig. 4, a top view of the connecting-yoke P.

B is the chamber, having a branch, A, for the inlet of live steam and branch C for the outlet. The inlet branch A projects into the chamber B, leaving a space between its outside and the inside of the chamber, for the purpose hereinafter described, and is provided at its end with a seat for the valve D. In the lower part of the chamber B the piston E is fitted. The valve D and piston E are connected together by a yoke, P, the ends of which are attached to holes on the valves, and the sides of which pass outside the branch A through the space left by said branch and the inside of the chamber B; or the same may be connected by means of a rod or rods.

Through the cover *m* of the chamber A screw-rod J is placed, acting, when screwed down, upon the top of the valve D. Through the bottom of the chamber B a screw-rod, L, is placed, having a head, H, entering the interior of the piston E. Upon the bottom *n* of the piston E a spiral spring, G, is placed, and to the top of the interior of said piston E a spiral spring, F, is attached. These springs G and F are so arranged that when the valve D is closed neither of them will come in contact with the head H of the screw-rod L.

K is a small opening in the bottom of the chamber B to allow the escape of any condensed water which may pass the piston E.

The diameters of the valve D and of the piston E are in a proportion corresponding with the proportion of the pressure of the live steam entering through branch A and the desired pressure to be maintained in the outlet branch C. Supposing the pressure of the live steam entering through branch A and acting against valve D is sixty pounds, and the pressure maintained in the branch C is to be ten pounds, the area of the piston E multiplied by ten must be equal to the area of the valve D multiplied by sixty, when, as long as these pressures are maintained, the valve D will remain closed. As soon as the pressure in the branch C will become reduced the valve D will be opened by the action of the live steam at sixty pounds' pressure.

Should the pressure in the branch A be reduced, the head H of the bolt L is moved upward against the spring F, or, when the pressure in the branch A is increased, said head H is moved downward against the spring G, increasing or diminishing thereby the necessary pressure to act against the piston E. In the same way any desired pressure in the branch C may be regulated.

If the valve is to be used as a stop-valve, shutting off the steam altogether, the rod J is screwed down upon the valve D, to prevent the same from being opened by any action of the live steam until said rod J is screwed up again.

What I claim is—

In combination with chamber B, the valve D and piston E, connected together, and the screw-rod L, having head H, and the springs F and G, substantially as and for the purpose set forth.

PETER SMITH.

Witnesses:

F. V. BRIESEN,
C. A. FREES.