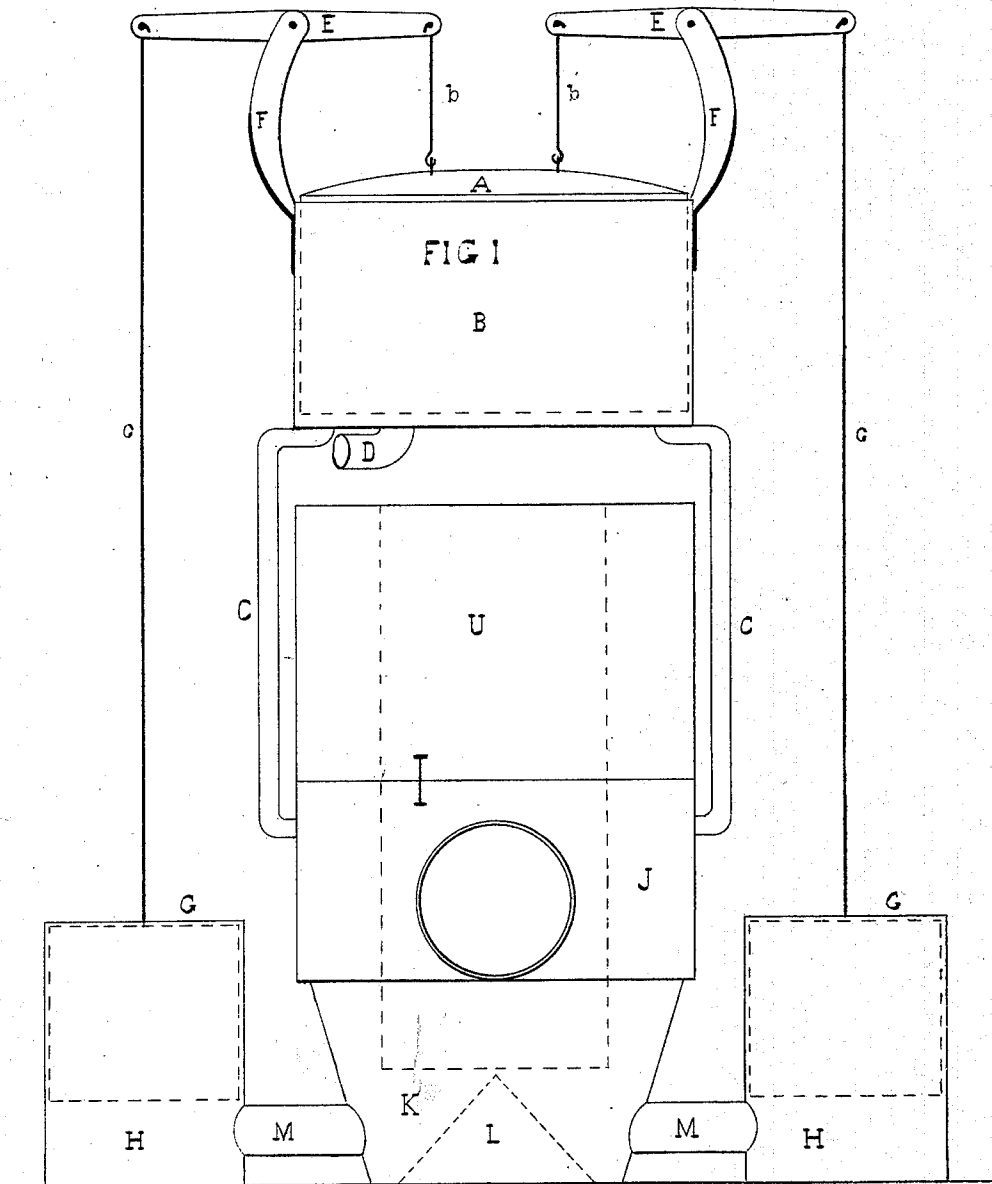


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Gas Governors and By-Passes.

No. 139,514.

Patented June 3, 1873.



WITNESSES

Edmund P. Kochran
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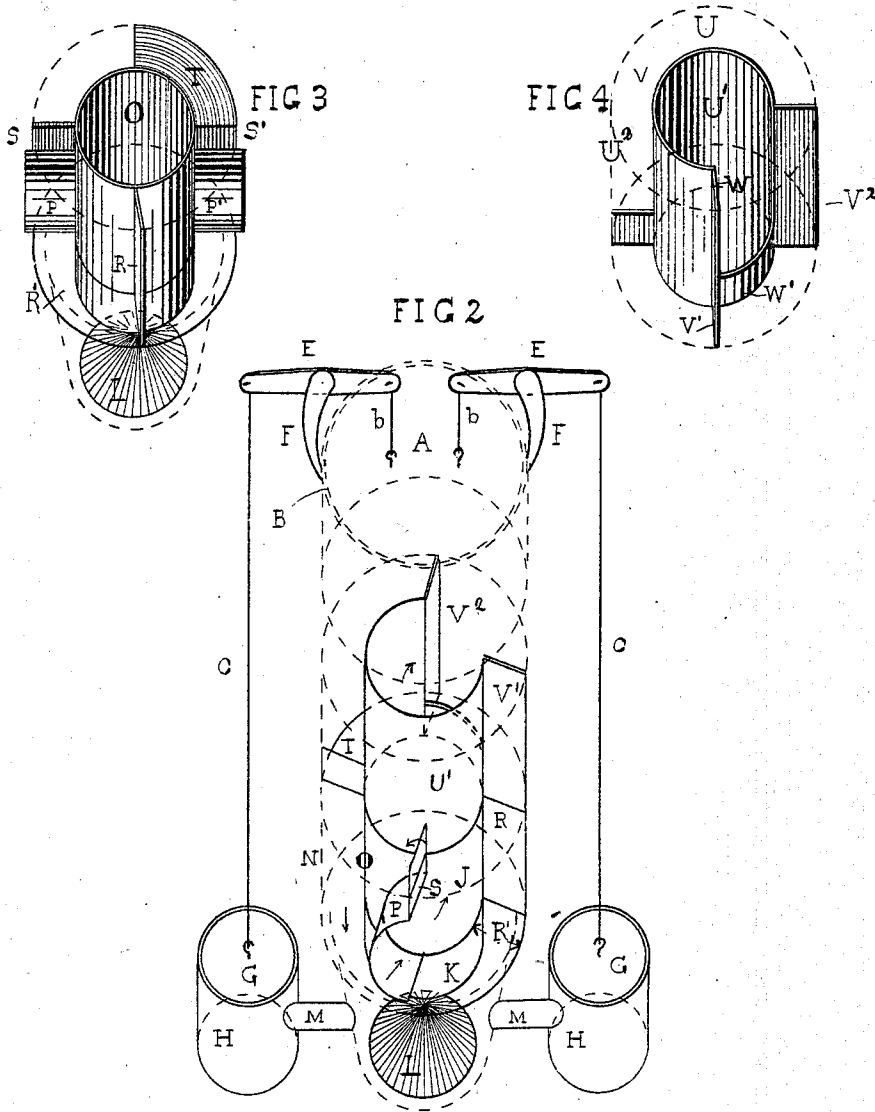
INVENTOR

Peter Munzinger
By Francis D. Pastorius
his Atty in fact

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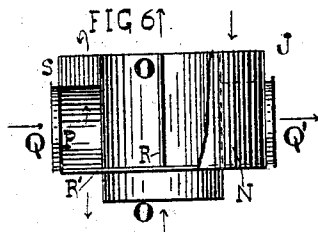
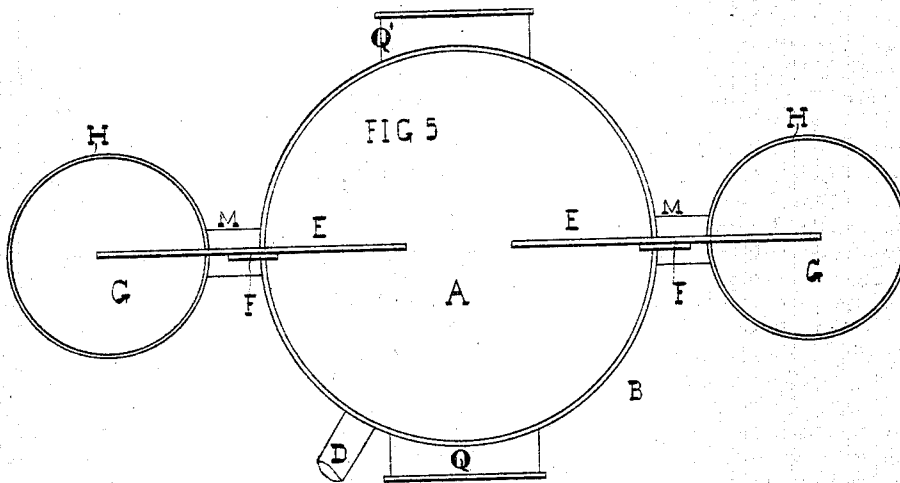
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UNITED STATES PATENT OFFICE.

PETER MUNZINGER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN GAS-GOVERNORS AND BY-PASSES.

Specification forming part of Letters Patent No. **139,514**, dated June 3, 1873; application filed March 11, 1873.

To all whom it may concern:

Be it known that I, PETER MUNZINGER, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improved Gas-Governor and By-Pass, of which the following is a specification:

The invention, which, when convenient, is placed between the gas-holder of the works and the street-main, is designed for regulating the pressure of gas in mains. It consists in applying the said gas-pressure in street-mains to a floating holder connected with floats, the raising and lowering of which cause the mouth of the inlet-pipe of a by-pass to be opened or closed by fluid acted on by the said floats. The by-pass also serves to pass the gas to the street-main without being controlled by the action of the pressure-regulator.

Figure 1 is an elevation of the gas-governor and by-pass. Fig. 2 is a top view and elevation of Fig. 1, the shell or case being shown in dotted lines. Fig. 3 is a view of the by-pass valve-chamber. Fig. 4 is a view of the by-pass valve. Fig. 5 is a plan view of Fig. 1. Fig. 6 is an elevation of the by-pass valve-chamber, partly sectioned.

A, Fig. 1, dotted lines Fig. 2, is a gas-float in the fluid-tank or holder B on the supports C. D is a pipe from the gas-main, which enters the tank B, and projects above the fluid-level in the float A. E E are levers, which turn on the fulcrums F F extending upwardly from the opposite points of the tank B. Their inner ends are connected with the gas-float A. By the rods b b to their outer ends the floats G G of the fluid-tanks H H are suspended by the rods c c. I is a by-pass. Its upper part J is cylindrical. Its lower part or water-chamber K is conical, to contract the water-space. To that end, also, a conical projection, L, is raised on its bottom. M M are pipes from the tanks H H to the lower end of the by-pass. The upper part J of the by-pass is composed of two concentric cylinders, N O. The outer one N forms the shell or case. The inner one O forms the inlet-pipe. In Fig. 1 the case or shell is shown by full lines; the inlet-pipe by dotted lines. In Fig. 2 the case or shell is shown by dotted lines, and the inlet-pipe and valve-center by full lines, through which the gas passes. P P' are semi-cylindric-

al extensions of the inlet and outlet nozzles Q Q', Figs. 1 2 3 5 6. They take against the inlet-pipe O, and divide the chamber J diametrically and vertically. R, Figs. 2 3 6, is a partition or deflector, which projects radially from the inlet-pipe O to the case N. It extends from the top of the inlet-pipe to the half ring or horizontal dividing-plate R', Figs. 2 3 6, which separates one half of the chamber J from the water-chamber K. It is at right angles to a vertical plane drawn through the axis of the nozzles Q Q'. S S' are deflectors from the nozzle-extensions to the top of the inlet-pipe. T, Fig. 3, is a circular plate at the top of the inlet-pipe, covering the space between it and the shell or case. It is joined at one end to the deflector S', and extends in length one quarter of the circumference of the inlet-pipe. The circular valve U, Figs. 1 2 4, of the by-pass is also composed of concentric cylinders U¹ U², which are closed at the top by the cap V of the valve, dotted lines, Figs. 2 4. They fit upon and exactly conform with the cylinders N O of the valve-chamber J. V¹ V² are radial partitions or deflectors placed at right angles to each other. They extend, in width, from the cylinder U¹ to the cylinder or shell U², and the length of the valve. V³ V⁴, Figs. 2 4, are radial-joint covers, which take over the upper joints of the partitions or deflectors of the by-pass valve-chamber J, and protect them from the destructive action of the gas. W is a longitudinal opening in the cylinder V¹. It extends its entire length saving the small joint-cover W¹, which prevents the gas from coming in contact with the joint formed by the butting ends of the cylinders O U¹. Its purpose is to pass the gas from the inlet-pipe to the nozzle Q'.

As shown by the accompanying drawings, the valve is set for the passage of gas under the control of the gas-governor. The deflector V¹ of the valve forms a continuation of the by-pass deflector R. The edge-cover V³ of the valve rests upon the short deflector S of the nozzle-extension P. The cover V⁴ of the valve sets upon the edge of the circular plate I; and the deflector V² of the valve forms a continuation of the deflector S' of the nozzle P'.

The gas is admitted through the extension P of the inlet-nozzle Q, and is deflected by the

partitions R V¹ in the direction of the arrow, over the short partition S and the cover V³, and flows into the conical chamber K, up the inlet-pipes O U¹, through the slot W, and out at the nozzle Q'. If the pressure of the gas in the main exceeds its maximum it raises the float A, which, through the medium of the rods b b c c and the levers E E, depresses the floats G G, and forces the water in the tanks H H through the pipes M M into the chamber K, thereby raising the water-level until it closes the mouth of the inlet-pipe O and stops the gas-flow. If the pressure in the main should decrease below its minimum the floats G G will be raised by the descent of the float B, the water-level will be lowered, and the gas thereby given additional flow. By turning the valve until the deflector V¹ takes over the end of the plate T, and the deflector V² over the cover S, the gas will flow through the by-pass without being controlled by the governor.

I claim as my invention—

1. The float A, tank B, levers E, fulcrum F, floats G, tanks H, and the rods b b c c, for the purpose shown and described.

2. The floats G, tanks H, pipes M, and the conical chamber K, for the purpose shown and described.

3. The chamber K, in combination with the conical projection L, as shown.

4. The chamber J, composed of the concentric cylinders N O, the inlet and outlet nozzles P P', deflector R, horizontal division-plate R', deflectors S S', and the plate T, for the purpose shown and described.

5. The circular valve U, composed of the concentric cylinders U¹ U², radial partitions V¹ V², and the deflectors V³ V⁴, for the purpose shown and described.

6. The vertical slot W in the cylinder U¹ for the purpose shown and described.

7. The valve-chamber J, valve U, and conical chamber K, as and for the purpose shown and described.

In testimony whereof I hereunto sign my name in presence of two subscribing witnesses.

PETER MUNZINGER.

Witnesses:

THOS. C. WARWICK,

FRANCIS D. PASTORIUS.