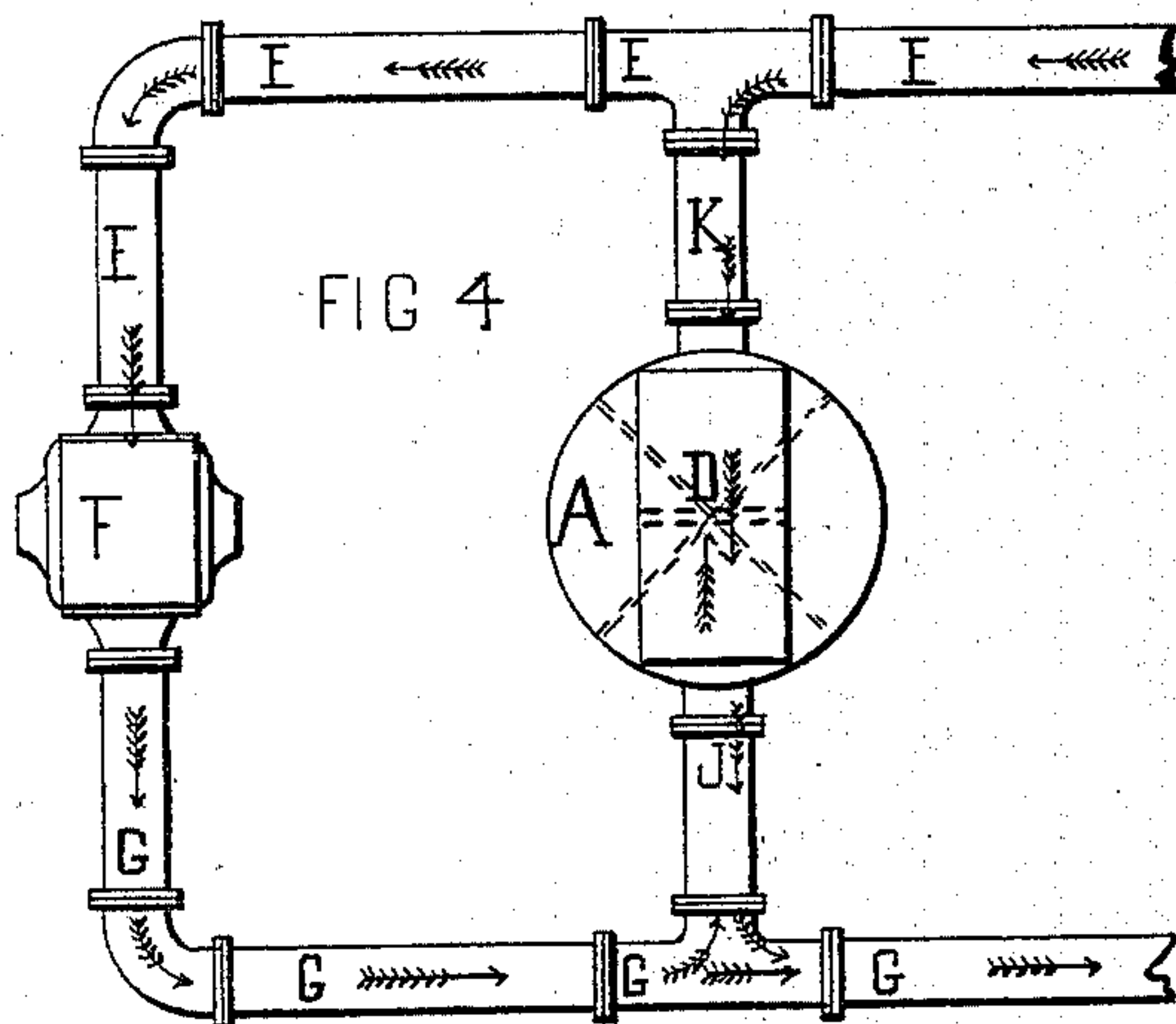
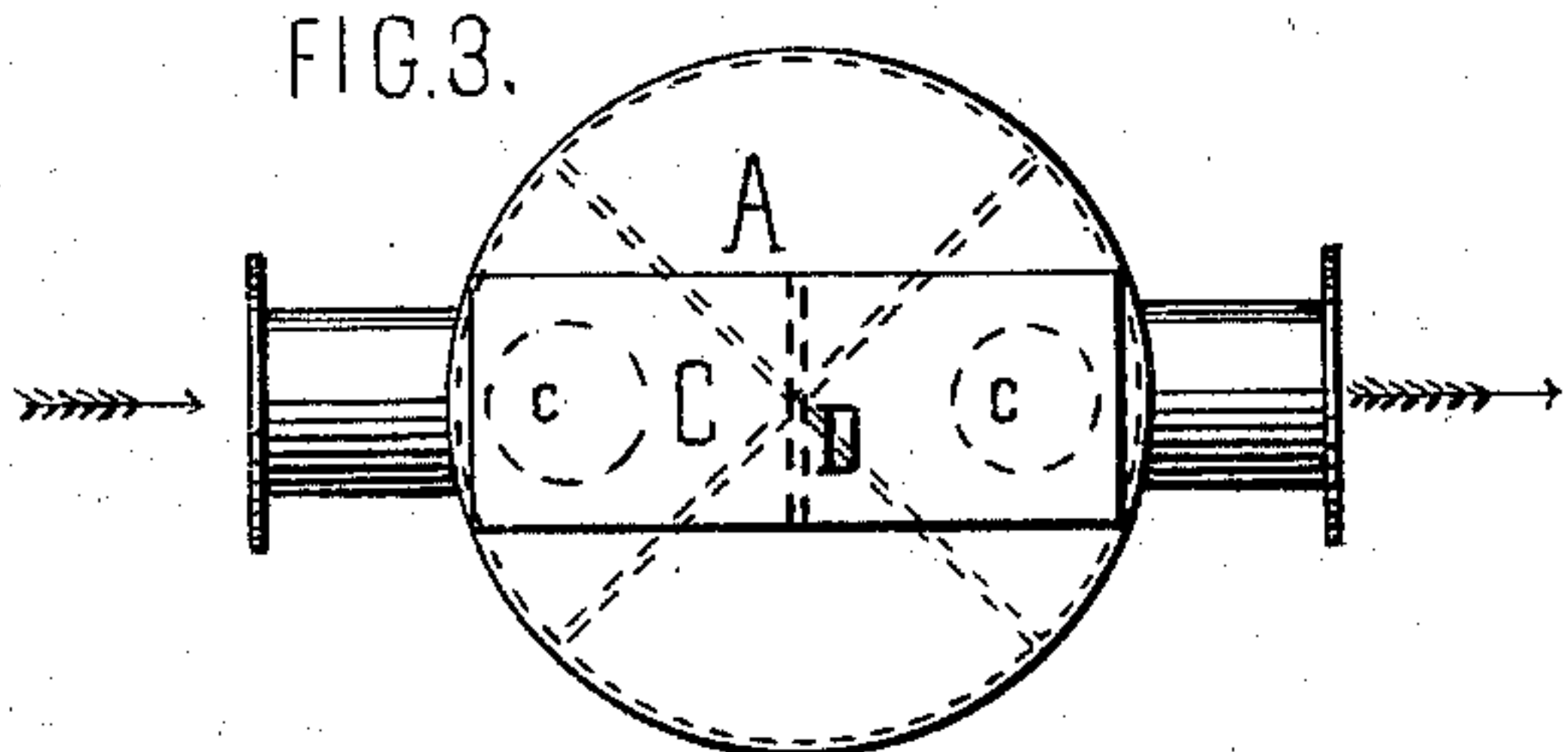
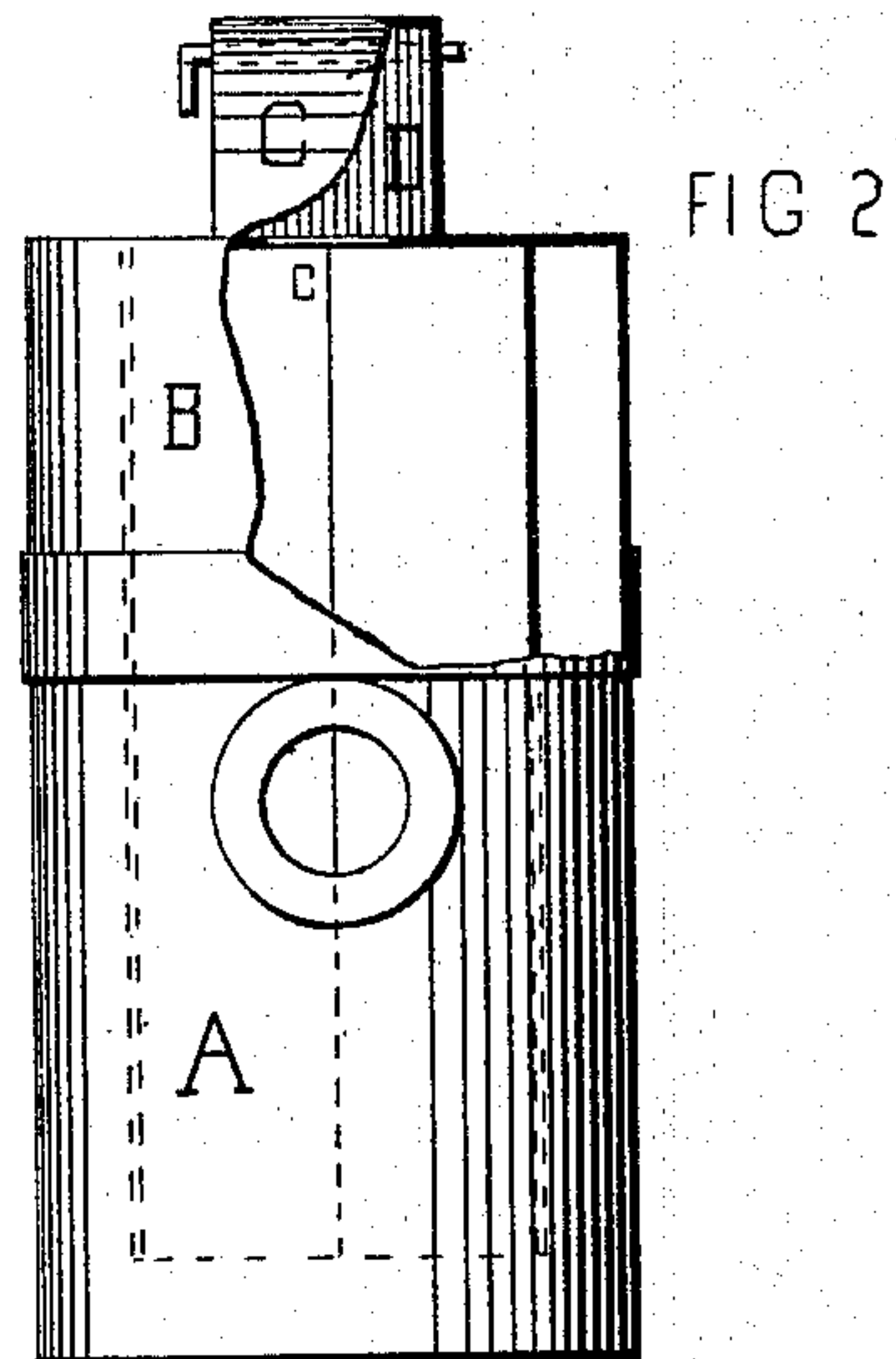
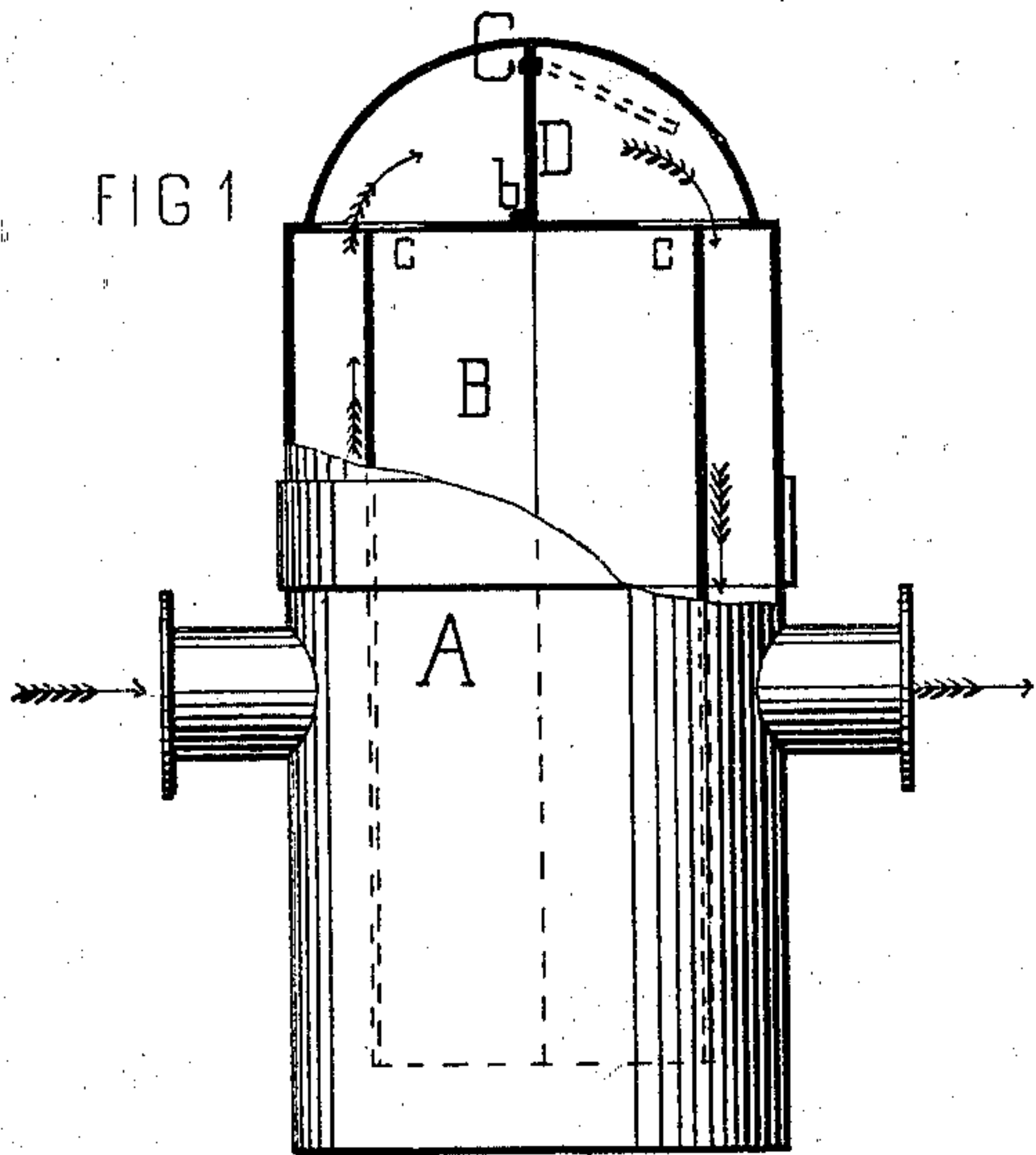


P. MUNZINGER.
By-Passes for Gas-Works.

No. 144,408.

Patented Nov. 11, 1873.



WITNESSES
Robt Carr
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UNITED STATES PATENT OFFICE.

PETER MUNZINGER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN BY-PASSES FOR GAS-WORKS.

Specification forming part of Letters Patent No. **144,408**, dated November 11, 1873; application filed September 16, 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 Improvement in By-Passes for Gas-Works, of which the following is a specification:

The invention is for correcting any inaccuracies in the working of the exhauster used for pumping the gas from the retorts. It consists of an automatically-acting valve placed in the shut-off or valve of the by-pass.

Figs. 1 and 2 are vertical, diametrical, and opposite sections of a by-pass. Fig. 3 is a top view. Fig. 4 is a plan view, showing the arrangement of the exhauster, by-pass, and the pipes for taking the gas from the retorts and conducting it to the gas-holder.

A is a by-pass, on the valve-box B of which is a valve-box, C, containing an automatically-working valve, D, which closes against a jamb-strip, *b*, as shown. It is of the kind known as a fly or flap valve. By suitable inlet and outlet openings *c* the two valve-chambers are made communicating. As shown at Fig. 4, E are pipes from the retorts to the exhauster F. G are pipes from the exhauster to the gas-holder. A is the by-pass between the pipes E G, with which it is connected by means of the cross-pipes J K. The gas is pumped by the exhauster through the pipes E, and forced by the same through the pipes G to the gas-holder, to relieve the retorts from accumulated resistances and pressures.

The by-pass A is set to prevent the flow of gas between the pipes E G, except through

the opening of the automatic valve D. The gas, while being forced through the pipe G to the gas-holder, fills the pipe J and the by-pass. Its pressure against the valve D holds it firm against the jamb-strip *b*, and thereby effectually prevents the return of the gas to the retorts.

If the exhauster should become disarranged in any of its parts and unable to pump the gas from the retorts, the accumulation of the pipes E will flow through the pipes K into the by-pass and press open the valve D, and thus escape the gas through the by-pass and the pipes J G to the gas-holder.

I do not confine myself to the valve-box C and the automatic valve D constructed and arranged with reference to the by-pass, knowing that valves of other construction can be used to produce the same result. I do not confine myself to a by-pass constructed as shown; but

I claim as my invention—

A by-pass in combination with an automatic valve, arranged to close when the pressure of the gas in the forcing-pipes G exceeds the pressure in the suction-pipes E, and to open when the pressure of the gas in the suction-pipes E exceeds that in the forcing-pipes G, 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.