

(No Model.)

A. SAUER & G. F. SIEVERN.

GAS PRESSURE REGULATOR.

No. 341,607.

Patented May 11, 1886.

Fig. 1.

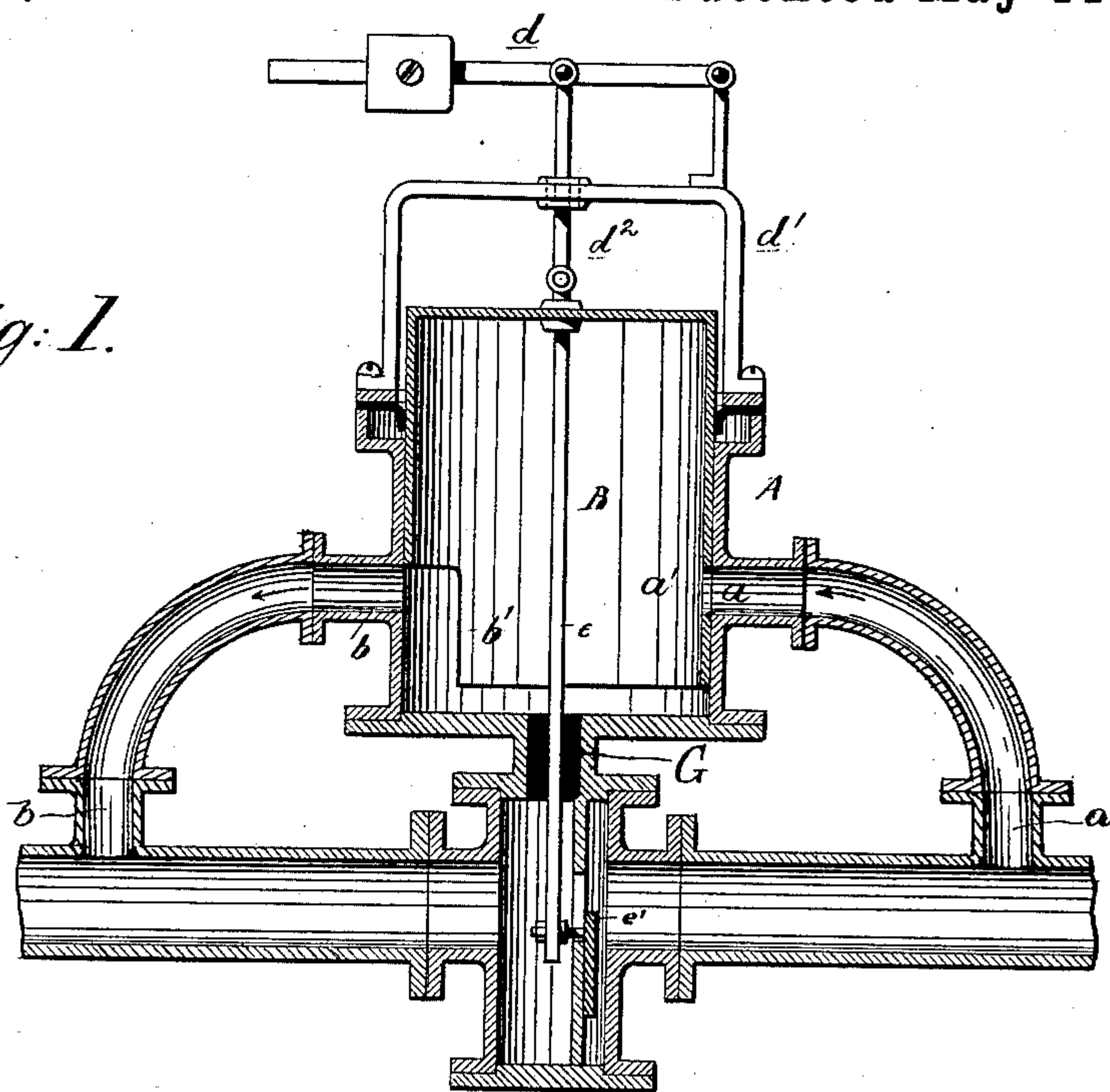
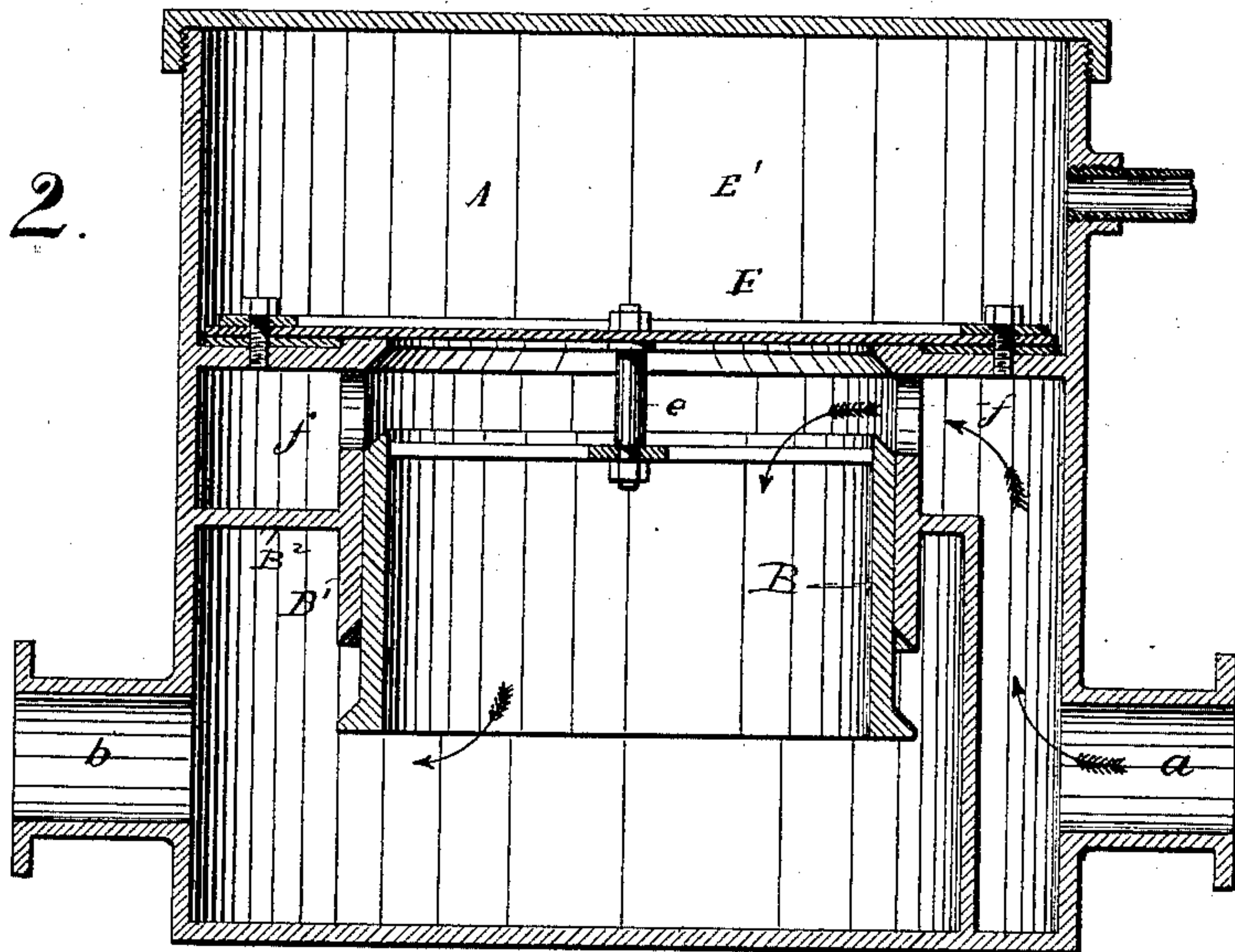


Fig. 2.



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GAS-PRESSURE REGULATOR.

SPECIFICATION forming part of Letters Patent No. 341,607, dated May 11, 1886

Application filed January 23, 1886. Serial No. 189,455. (No model.)

To all whom it may concern:

Be it known that we, ALBERT SAUER and GUSTAV F. SIEVERN, of Pittsburg, in the county of Allegheny, State of Pennsylvania, have invented certain new and useful Improvements in Gas-Pressure Regulators, of which the following is a specification.

This invention has reference to an improved pressure-regulator for natural and other gas, so that the same is supplied for use at a uniform pressure.

In the accompanying drawings, Figures 1 and 2 are vertical central sections of two different constructions of our improved gas-pressure regulator.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a valve-casing, of cylindrical or other shape, which is connected with an inlet-pipe for the natural or other gas, and an outlet-pipe, *b*.

In the casing A is guided a slide-valve, B, of cylindrical or other shape, which is connected to a suitable balancing mechanism by which the maximum pressure is regulated. The balancing mechanism consists of a weighted lever, *d*, that is pivoted to the standard of a yoke, *d'*, secured to the upper part of the casing A, and connected by a pivot-rod, *d''*, to the closed top of the slide-valve B, as shown in Fig. 1. The weight is adjusted to the pressure at which the gas is to be supplied. When the pressure of the gas is greater than the pressure of the weighted lever on the slide-valve, the latter is raised, so that the inlet-port *a* is partly or entirely closed by a coinciding opening, *a'*, at the lower part of the slide-valve, and thereby the supply of gas diminished or entirely interrupted. When the gas-pressure is reduced, the slide-valve is lowered by the action of the balancing-lever, so as to produce the registering of the opening *a'* of the slide-valve with the supply-main *a*, and thereby the free passage of the gas re-established. The outlet-port *b* is kept open by a recess, *b'*, of the slide-valve, so as to secure the free flow of the gas to the outlet-pipe.

By connecting the slide-valve B by a rod, *e*, with the valve *e'* in the gas-main, as shown in Fig. 1, the supply of gas passing through the main is regulated by the valve *e'* as the same is opened and closed more or less by the slide-valve B. The gas passes through the valve and regulating-main in the direction of the arrows, Fig. 1, and serves, by the action of the slide-valve B, to regulate the flow through the main.

In Fig. 2 the slide-valve B is arranged with a different balancing mechanism. A diaphragm, E, separates the upper part of the casing A from the lower part of the same, and forms a chamber, E', above the diaphragm, which chamber is filled with air or any other suitable elastic medium, to which a certain degree of pressure is imparted. The diaphragm E is connected by a rod, *e*, with a central hub of the open top part of the slide-frame. The slide-valve is guided by an interior body, B', that communicates by openings *f* with the inlet-pipe *a*, but is separated by a partition, B², from the outlet-pipe *b*, as shown in Fig. 1. By the increased pressure of the gas in the lower part of the casing A the diaphragm E and the slide-valve B are raised, so that the supply-openings *f* are partly closed. The decreasing pressure of the gas reduces the pressure on the diaphragm and lowers the slide-valve B. When the gas-pressure is greater than the pressure exerted on the diaphragm E by the compressed air in the chamber E', the slide-valve B keeps the supply-openings *f* entirely closed, and thereby the flow of gas interrupted, until the pressure of the same is reduced.

The advantages of our improved pressure-regulator are that the pressure of the gas is automatically controlled by the gas itself, which pressure can be regulated as required by the use to which the gas is to be applied.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

In a gas-regulator, the casing A, having inlet and outlet pipes connected to the main, a slide-valve, B, adapted to open or close the supply-opening therein, and a weighted lever

connected to said slide-valve, in combination
with a slide-valve, *e'*, in said main between
the points of juncture with the inlet and out-
let pipes of the regulator, and the rod *e*, con-
5 necting both said valves, whereby they are
caused to act simultaneously, substantially as
described.

In testimony that we claim the foregoing as

our invention we have signed our names in
presence of two subscribing witnesses.

ALBERT SAUER.

GUSTAV F. SIEVERN.

Witnesses:

ANGELO IVOL,

ISAAC PAGGIS.