

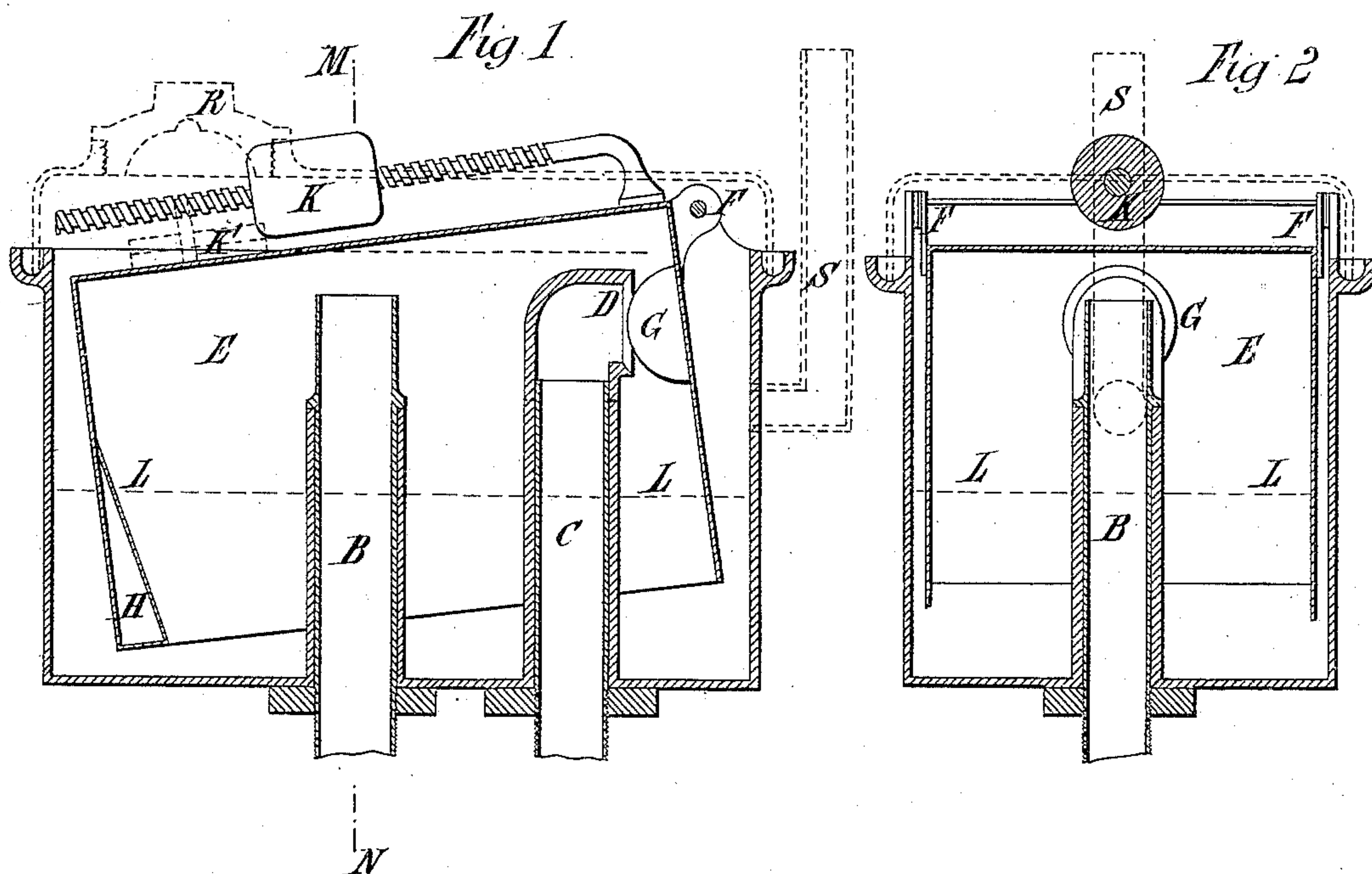
(Model.)

2 Sheets—Sheet 1.

J. B. COX.
Gas Regulator.

No. 232,943.

Patented Oct. 5, 1880.



Attest.

J. A. Rutherford
J. Henry Kaiser

Inventor.

James B. Cox.

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James L. Norris.
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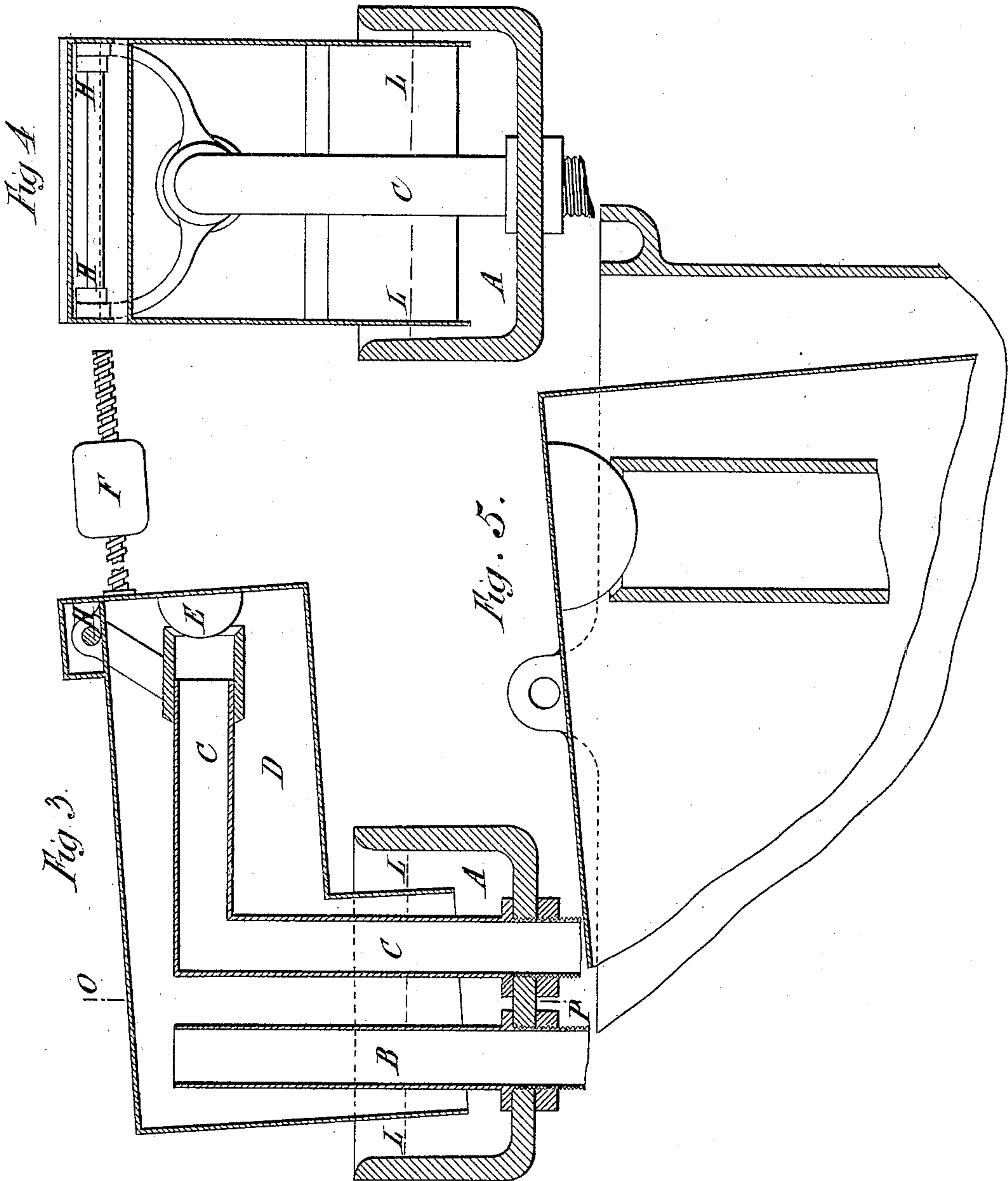
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UNITED STATES PATENT OFFICE.

JAMES BLATCH COX, OF 13 STRAND, TORQUAY, ENGLAND.

GAS-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 232,943, dated October 5, 1880.

Application filed March 3, 1880. (Model.) Patented in England September 18, 1879.

To all whom it may concern:

Be it known that I, JAMES BLATCH COX, of 13 Strand, Torquay, in the county of Devon, in that part of the United Kingdom called
5 England, ironmonger, have invented certain new and useful Improvements in Gas-Regulators for Regulating the Supply and Pressure of Gas, (for which I have obtained a patent in Great Britain, No. 3,747, bearing date September 18, 1879,) of which the following is a specification.

This invention consists of improvements in gas regulators or governors for regulating the supply and pressure of gas and for insuring
5 at all times an equal supply and pressure to burners, gas-fires, and other similar uses, and which are meant to be fixed to service-pipes of houses, factories, or other places supplied with gas at or near their connection with the main
20 pipes, for the purpose of preventing alteration of pressure in the former, no matter how it may vary in the latter. They are made in various sizes, according to number of lights required to be supplied.

25 The apparatus consists of a vessel or vessels of any convenient size or shape, made of metal, china, or glass, of metal enameled with china or glass, or of two or more combined, through the bottom of which are inserted outlet and
30 inlet pipes. Inside this vessel, and attached to it at or near one end by a hinge or joint, is a second inverted vessel or container. Gas is prevented from escaping between these vessels by mercury, solutions of chloride of calcium, chloride of magnesium, or other salt or salts, or glycerine, or their solutions, or any other liquid. The action is as follows: Gas is admitted through the inlet-pipe to the container, thence through the outlet-pipe to supply the necessary lights.

40 The mode of adjusting the valve is as follows: Gas being turned on, the desired pressure or flow of gas is secured by screwing or unscrewing the balance-weight, which governs
45 the movement of the container and the consequent opening or shutting of the valve. The nearer the balance-weight is brought to the hinge upon which the container swings the lighter and more buoyant is the latter, and the
50 nearer the weight is brought to the opposite end of its screwed bar the greater the effort

required by the gas to raise the container. When any of the lights are turned off, or the pressure in the main is increased, gas accumulates and raises the container, still farther closing the valves, which prevents pressure at the burners which still remain lit from increasing, but preserves it at its original force.

In some cases I may use two containers connected by means of a pipe, and working on an
60 axis furnished with an adjusting-screw and weight.

In order that my said invention may be clearly understood, I will now proceed to describe the same with reference to the annexed
65 drawings.

Figure 1 represents a longitudinal section, and Fig. 2 a cross-section on the line M N.

A is a vessel, through the bottom of which pass the outlet-pipe B and inlet-pipe C. At
70 the upper end of the latter is an opening, D. E is an inverted vessel or container attached to the vessel A by means of the hinge or joint F. G is a plug attached to the container E and fitting into the opening D, thus forming
75 a valve. H is an air-chamber to assist in raising the container E. K is a balance ball or weight for regulating the permanent pressure required.

Line L shows the height of liquid in the
80 vessel A; but this may be varied without in any way altering the action of the regulator, provided there is always a sufficiency of liquid to submerge the mouth of the container.

A cover is sometimes used, as shown by
85 dotted lines, Figs. 1 and 2, in which case the balance ball or weight K and screw are dispensed with, and pressure is adjusted by placing small weights K' on the container E. These are put on or taken off through the plug R.
90

S is a vent-pipe, to prevent pressure of air in the outer vessel, A.

Its action is as follows: Gas being admitted through the pipe C and valve D G passes out through the pipe B to supply the lights. Should
95 all the taps be closed the container E will immediately rise and close the valve D G, falling again and opening the valve as the lights are lit. The pressure of gas at the burners is regulated by screwing forward or back the
100 ball or weight K, or by putting on or taking off the equivalent weights K', and once fixed

no variation can take place unless the regulating-ball K or weights K' be again purposely moved.

5 The air-chamber H may be dispensed with by enlarging the container E.

Fig. 3 represents a longitudinal section of regulator, specially planned for use where mercury is preferred as a means of sealing the joint between the outer and inner vessel. A
10 is the trough for containing mercury; B, outlet-pipe; C, inlet-pipe; D, container; E, plug, which, fitting into end of pipe C, forms valve; F, ball or weight to balance container D and adjust pressure; H, hinge or joint line; L,
15 height of mercury. Fig. 4 represents a cross-section of same through the line O P. Fig. 5 represents a modification of the valve G.

I am aware of the American Patent No.

12,943 and of British Patent No. 2,527 of 1858, and I hereby disclaim the construction 20 therein shown and described.

What I do claim is—

In a gas-regulator, the combination, with the outer vessel for holding a sealing-liquid and having the inlet and outlet pipes arranged as 25 shown, of the inverted gravitating vessel pivoted at one end inside the outer vessel, and provided with an adjustable weight, said inverted vessel having on the inner surface of one of its walls a rigidly-fixed valve, all of said 30 members being constructed and arranged to operate as herein described and shown.

JAMES BLATCH COX.

Witnesses:

JOHN GLANFIELD,

W. DAWSON AINGER, Jr.