

(No Model.)

C. G. DYOTT.
GAS REGULATOR.

No. 427,979.

Patented May 13, 1890.

Fig. 1.

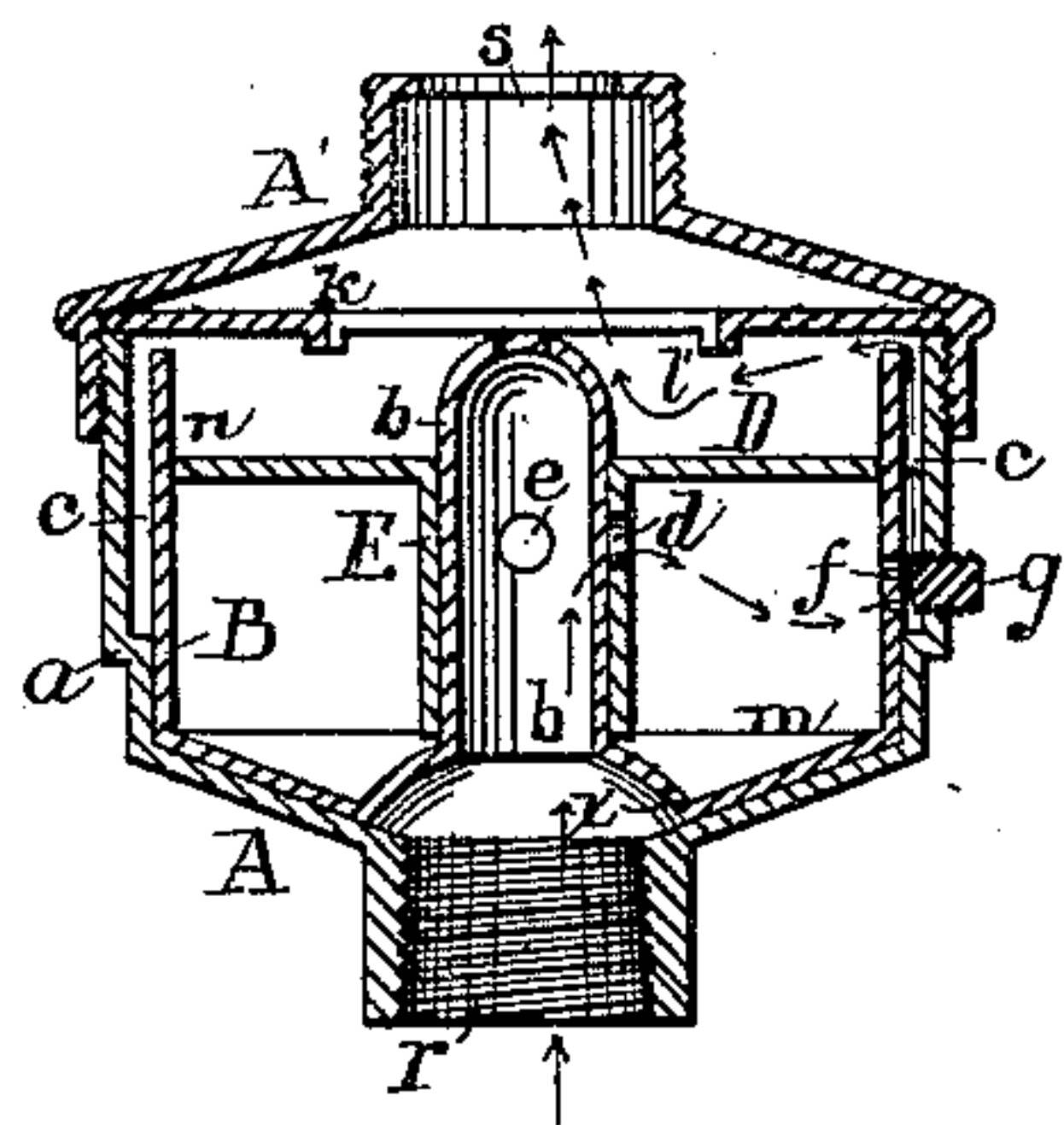


Fig. 2.

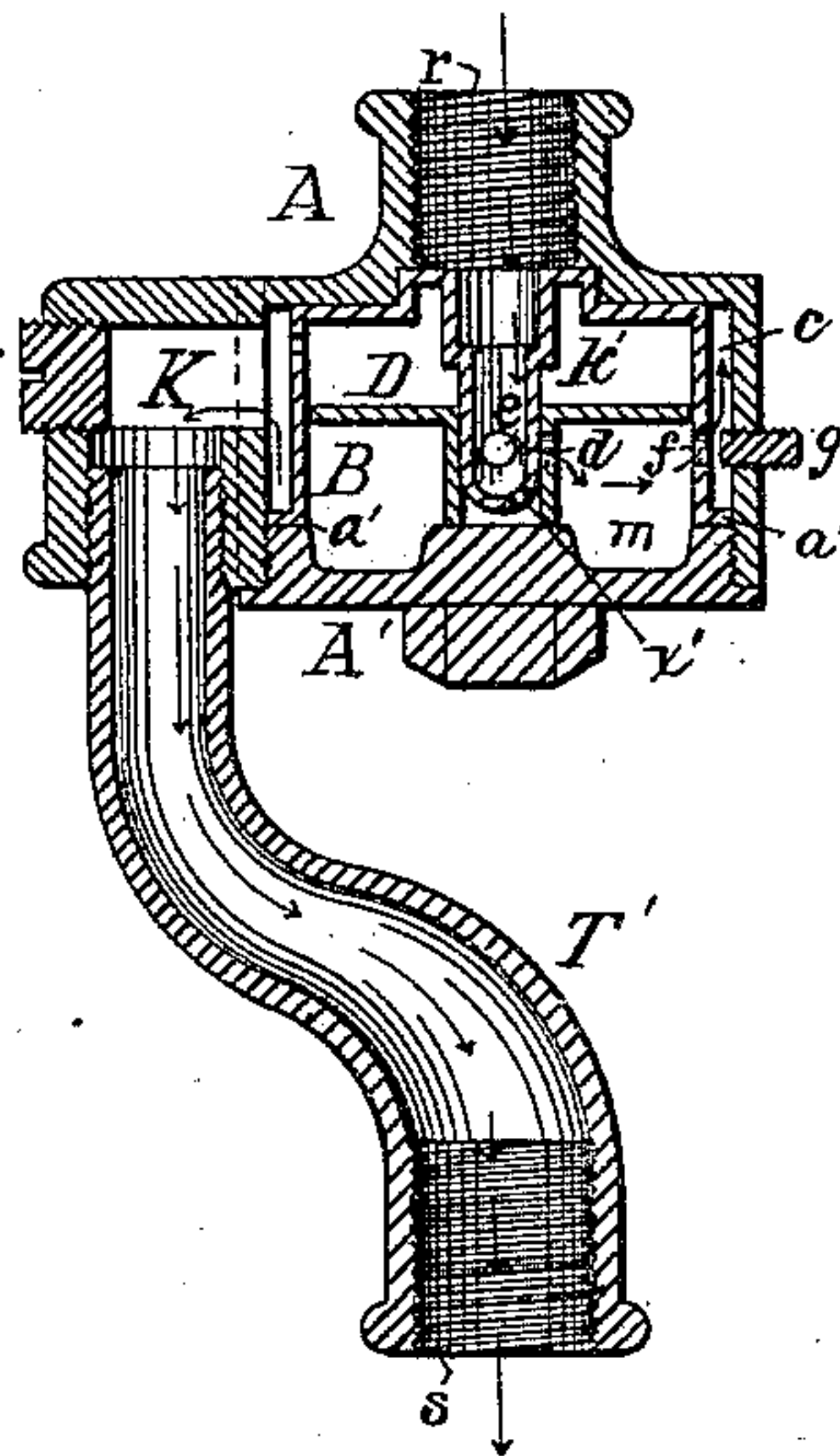
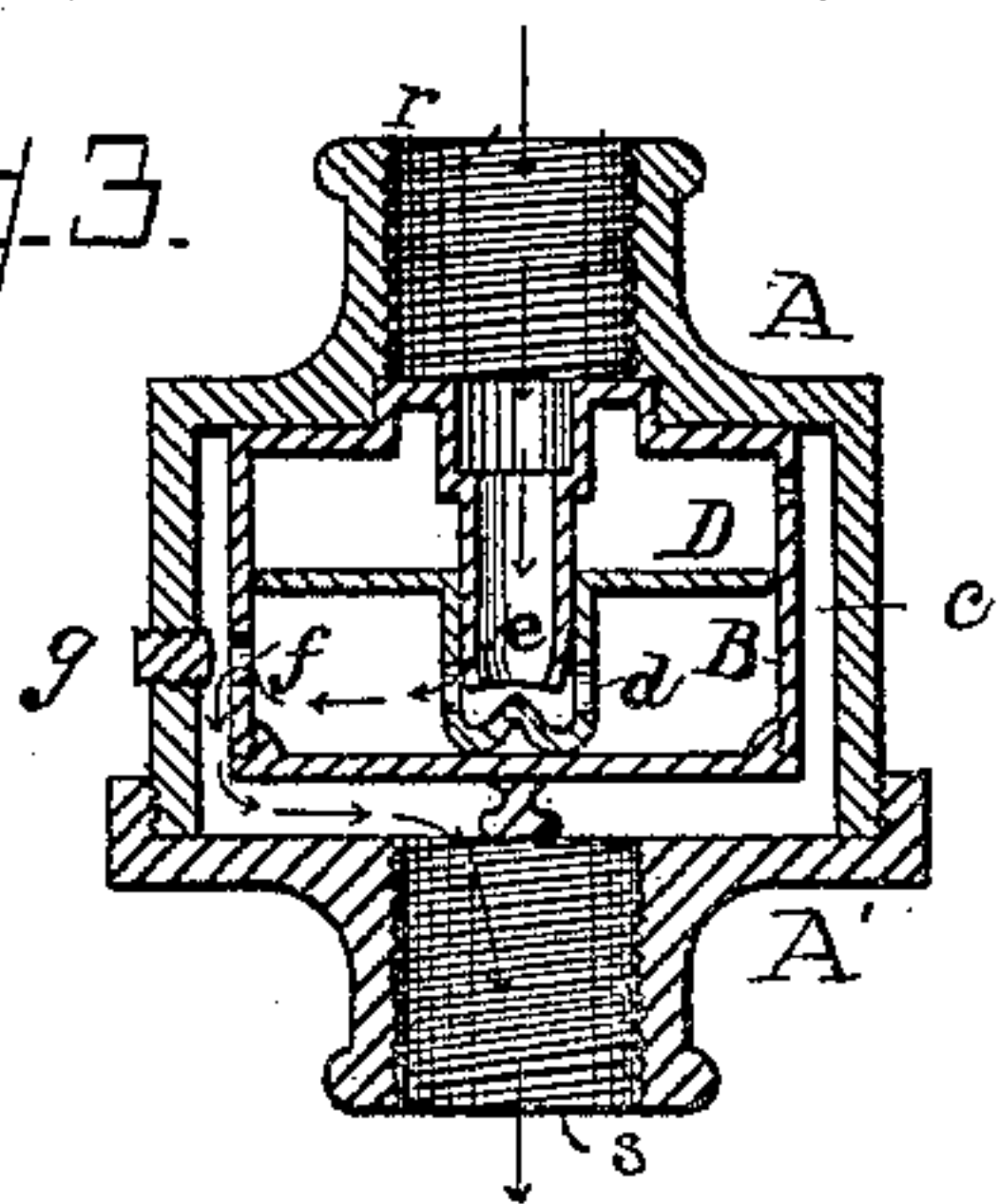


Fig. 3.



WITNESSES:
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CHARLES G. DYOTT, OF PHILADELPHIA, PENNSYLVANIA.

GAS-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 427,979, dated May 13, 1890.

Application filed May 31, 1888. Serial No. 275,652. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. DYOTT, a citizen of the United States, and a resident of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Gas-Regulators, of which the following is a specification.

This invention relates to gas-regulators, and more particularly to that class in which a single regulator is used to cause the flow of a fixed or uniform supply of any desired volume of gas.

The object of the invention is to provide simple and effective means for controlling the flow of gas under variable pressure, so that it shall be delivered at a uniform pressure and in any desired and constantly-maintained volume or quantity, and a special object is to provide for readily changing the amount or degree of pressure to suit the particular quantity or kind of gas being used, and thereby secure the greatest economy in combustion for the illuminating effect produced.

In carrying out my invention I provide a disk-like float having a downwardly-extending valve adapted to a valve-seat containing the gas-inlet opening, and I apply the said float and valve to an inner shell of the regulator, so that a chamber is formed below the float-disk in which a uniform gas-pressure is maintained. In the wall of said chamber I provide an opening, to which adjustable means are applied for varying the size of the opening, and thus changing the pressure at the burner tip or nozzle, according to the kind and quality of gas in use or to the size of burner tip or nozzle in use.

My improved regulator or governor is illustrated in the accompanying drawings, in which—

Figure 1 represents a vertical section of the regulator adapted for an upward flow of gas. Fig. 2 represents a vertical section of the same adapted for a downward flow of gas. Fig. 3 represents a vertical section of the regulator, showing a modification of the valve and its seat.

The main shell or body of the regulator is formed of the cup or receptacle A and the cap A', preferably united at their edges by a screw-thread joint. The cup A may be formed

with an outwardly-extending circumferential offset *a*, so as to form with inner shell B an annular passage *c*, connecting the receiving-chamber *m* of the regulator with the burner; or shell B may be formed with an offset or flange, so as to form such passage between the outer and inner shells. The shell B is preferably stamped up from sheet metal, and is formed with a central hollow post *b*, provided with one or more lateral openings *e*, leading into the lower chamber *m* of the regulator. A lateral gas-opening *f* is made in shell B for the escape of gas from chamber *m* into passage *c*. Shell B is made of the proper size to fit snugly in cup A of the outer shell, and when forced into place its hollow post *b* communicates freely with gas-inlet passage *r* of the regulator. Opposite opening *f* in shell B a screw-plug *g* is fitted in outer shell A for controlling the volume of gas flowing from chamber *m* to the burner. The disk-float D is made of proper dimensions to work smoothly in shell B, and it is provided with the downwardly-extending tubular valve E, adapted to slide upon post *b*. Valve E is provided with a number of circularly-arranged ports *d*, so that when in position one of the ports is certain to register with some of the openings *e* in the post. The disk-float D forms the top of receiving-chamber *m*. A small vent-opening *x* is preferably made in the lower part of the shell B or its post to allow condensed water or gas-tar to work off.

In the form of regulator shown in Fig. 1, adapted for an upward flow of gas, an annular distributing and stop-plate or flat ring *k*, having at its inner edge downwardly-turned lugs *l*, is placed upon the top edge of cup A and serves to distribute the gas in chamber *n*, and by means of its lugs *l* to arrest the upward movement of disk-float D. An offset or projecting lug *k* on the post, as in Fig. 2, may serve as a stop for disk-float D. A burner may be applied directly to the outlet passage or necks of the regulator.

Fig. 2 illustrates a regulator arranged for the downward flow of gas, and in this arrangement a side passage K is formed with cup A of the shell, and to this passage the burner-pipe T' is attached. This frees the cup A' from passages or external connections, so that

it may be readily removed from the cup A for cleaning the interior of the regulator without removing the main body of the regulator-shell from its connecting-pipes.

5 In order to adjust the regulator for operation, the cup A is screwed to the gas-service pipe or bracket. The burner or lamp is attached and gas is ignited at the burner-tip. Screw-plug *g* is then adjusted to or from opening *f* to control the volume or quantity of gas according to its kind and quality admitted to the burner-tip. This having been arranged, the regulator is in condition for delivering gas at a uniform and constantly-maintained pressure and in the desired volume to the burner. A change in the size of the burner tip or nozzle may require a readjustment of screw-plug *g* to vary the volume of gas to suit the size of burner tip or nozzle in use. The disk-float and attached valve, however, perform their function of uniformly controlling the pressure of the gas independent of the amount or volume delivered to and consumed at the burner.

25 Preferably I make the number of holes in hollow post *b* different from the number in sliding valve E. I can substitute a groove for holes *e*, and did so in governors which I made on July 2, 1886, and which are still in use. I am making the float D solid across the post and provide an enlargement of the valve-tube attached to float D opposite and above the valve-holes *e*. This will, however, be the subject of a future patent.

35 Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a gas-regulator, the combination, with its shell, of a disk-float having a downwardly-extending valve sliding on a post and forming an inlet-chamber in the base of the regulator, and an escape-opening for leading gas from such chamber, as described.

2. In combination with the shell of a gas-regulator, a disk-float having a downwardly-extending valve seated upon a post, said disk forming a receiving-chamber in the base of the

regulator, which chamber is provided with an escape-opening and an adjustable plug, for the purpose described.

3. In combination with the inner shell of a gas-regulator, having a hollow perforated post and an escape-opening, an adjustable plug arranged to control such opening, and a disk-float having a downwardly-extending valve sliding over the said hollow post, said disk forming a receiving-chamber in the base of the regulator.

4. In combination with the shell of a gas-regulator, a disk-float having a downwardly-extending valve and forming a chamber in the base of the regulator, the inner shell having a vent-passage *x*, as described.

5. In combination with the shell of a gas-regulator, a lateral gas-passage K, an inner shell having an escape-opening, an adjustable plug fitted in the outer shell in position to control said opening, a disk-float having a downwardly-extending valve and forming lower receiving-chamber *m*, and a removable disk for giving access to the interior of the regulator to clean it and adjust its internal fittings.

6. In combination with the shell of a regulator, a disk-float having a downwardly-extending sliding valve applied to a perforated hollow post, receiving-chamber *m*, having escape-opening *f*, and passage *c*, leading to the outlet of the regulator.

7. In combination with the shell of a regulator, a disk-float forming receiving-chamber *m*, a valve extending below such disk and controlling the inlet-opening to such chamber, an escape-opening leading from the chamber *m* and having an adjustable controlling-plug, and a passage connecting chamber *m* with the burner, for the purpose described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 25th day of May, 1888.

CHARLES G. DYOTT.

Witnesses:

CHAS. E. HITCHCOCK,
E. B. CLARK.