

(No Model.)

J. G. STRUB.
AUTOMATIC GAS PRESSURE REGULATOR.

No. 471,657.

Patented Mar. 29, 1892.

Fig. 1.

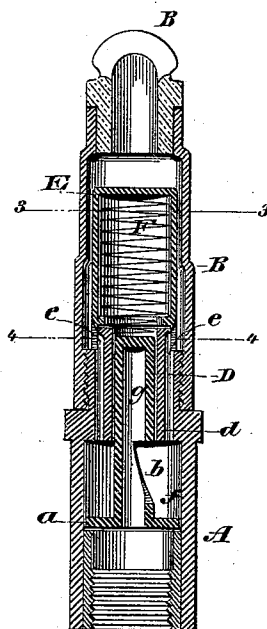


Fig. 3.

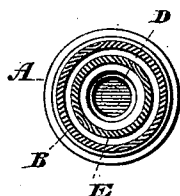


Fig. 4.

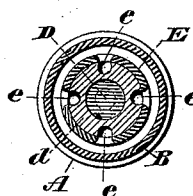


Fig. 2.

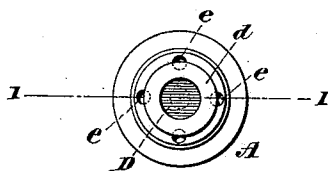
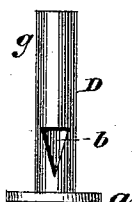


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN GEORGE STRUB, OF NEW YORK, N. Y.

AUTOMATIC GAS-PRESSURE REGULATOR.

SPECIFICATION forming part of Letters Patent No. 471,657, dated March 29, 1892.

Application filed April 8, 1891. Serial No. 388,163. (No model.)

To all whom it may concern:

Be it known that I, JOHN GEORGE STRUB, a resident of the city, county, and State of New York, have invented a new and useful Automatic Gas-Pressure Regulator, of which the following is a full, clear, and exact description.

My invention relates to that class of gas-pressure regulators that in themselves automatically regulate the discharge of the gas therefrom.

My invention consists in providing beneath an ordinary burner a valve that shall automatically regulate the discharge of the gas, so as to maintain a uniform flame, whether the pressure be great or small.

My invention is illustrated by the accompanying drawings, in which—

Figure 1 is a central section of my improved burner on an enlarged scale. Fig. 2 is a plan view of the lower portion of my device as it appears when the upper part and also a spring-containing cap are detached therefrom. Fig. 3 is a cross-section on the line 3 3, Fig. 1. Fig. 4 is a cross-section on the line 4 4, Fig. 1; and Fig. 5 is a side elevation of the valve.

A is the cylindrically-formed base portion of the burner, threaded at its inner lower end to fit the threaded nipple of a gas-pipe. It is threaded at its upper end on the outside to receive the burner B.

Within the cylinder A is carried a hollow plunger-valve D, this valve being supplied at its lower edge with a flange *a*. In the side of the tubular upright portion of the valve is a perforation *b*. The top of the tubular stem *g* of this valve is closed, while the lower end is open. The interior of the base A is formed to allow the flange *a* to closely fit and slide within the same. The upper portion of the base A has a shoulder *d* extending inward, as indicated by Fig. 1, which allows the upright portion of the plunger to closely fit and slide within the same. Within this shoulder are upright holes *ee*, that connect the chamber *f*, formed between the flange *a* and the shoulder *d*, with the space within the burner B. A cap E, containing a light spring F, may be fitted over the outside of the shoulder *d*, so that the spring F will bear on the top of the plunger D, keeping it normally in the position shown in Fig. 1. It will now be seen that as the gas enters the lower part of the burner

it will first enter the plunger, from whence, by means of the hole *b*, it will escape into the interior chamber *f*, thence up through the holes *ee* into the burner, and then out through the tip of the burner.

In operation as the pressure of the gas from the main increases it will by pressing against the flange *a* and against the closed upper end of the tubular stem *g* cause the plunger to rise to a more or less extent, which will as it rises cause the hole *b* in its side to become gradually closed by sliding up past the shoulder *d*, thereby regulating to a degree determined by the size of the hole *b* the pressure of the gas which feeds the flame. As the pressure decreases the valve will fall, opening the hole *b* wider, and thereby giving freer access for the gas.

It is obvious that it is not necessary that the spring-containing cap E be used in my device, as the force of gravity will cause the plunger to operate in the same manner; or if the plunger be not heavy enough itself a slight weight might be added to the upper part, or, in fact, to any accessible part, to cause said plunger to successfully accommodate itself to the pressure of the gas.

Having thus described my invention, what I claim is—

1. The cylindrical base A, having inner shoulder *d* and the vertical perforations *e* therein, combined with the inner vertically-movable plunger D, having closed top, lower flange *a*, tubular stem *g*, and aperture *b*, and with the burner B, said flange *a* fitting in the pillar of the burner, so that the gas must pass through the tubular stem *g* and opening *b* of the plunger-valve, substantially as shown and described.

2. The combination of the cylindrical base A, having the upright perforations *ee* therein contained, with the flanged hollow plunger D, having closed top and opening *b*, the cap E, carrying the spring F, and the burner B, said plunger fitting the pillar of the burner, so that the gas must pass through stem *g* and opening *b* of the plunger, all arranged for the purposes specified.

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Witnesses:

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