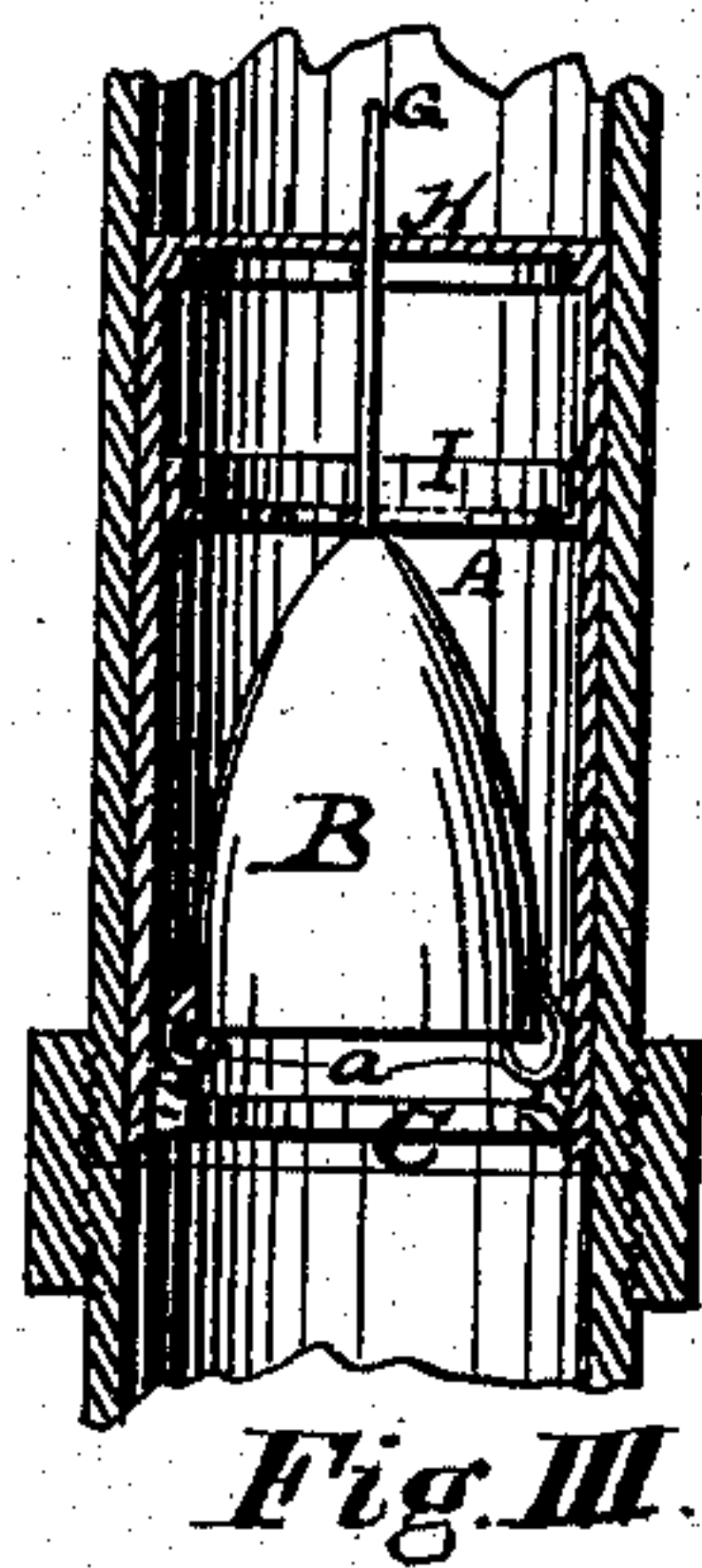
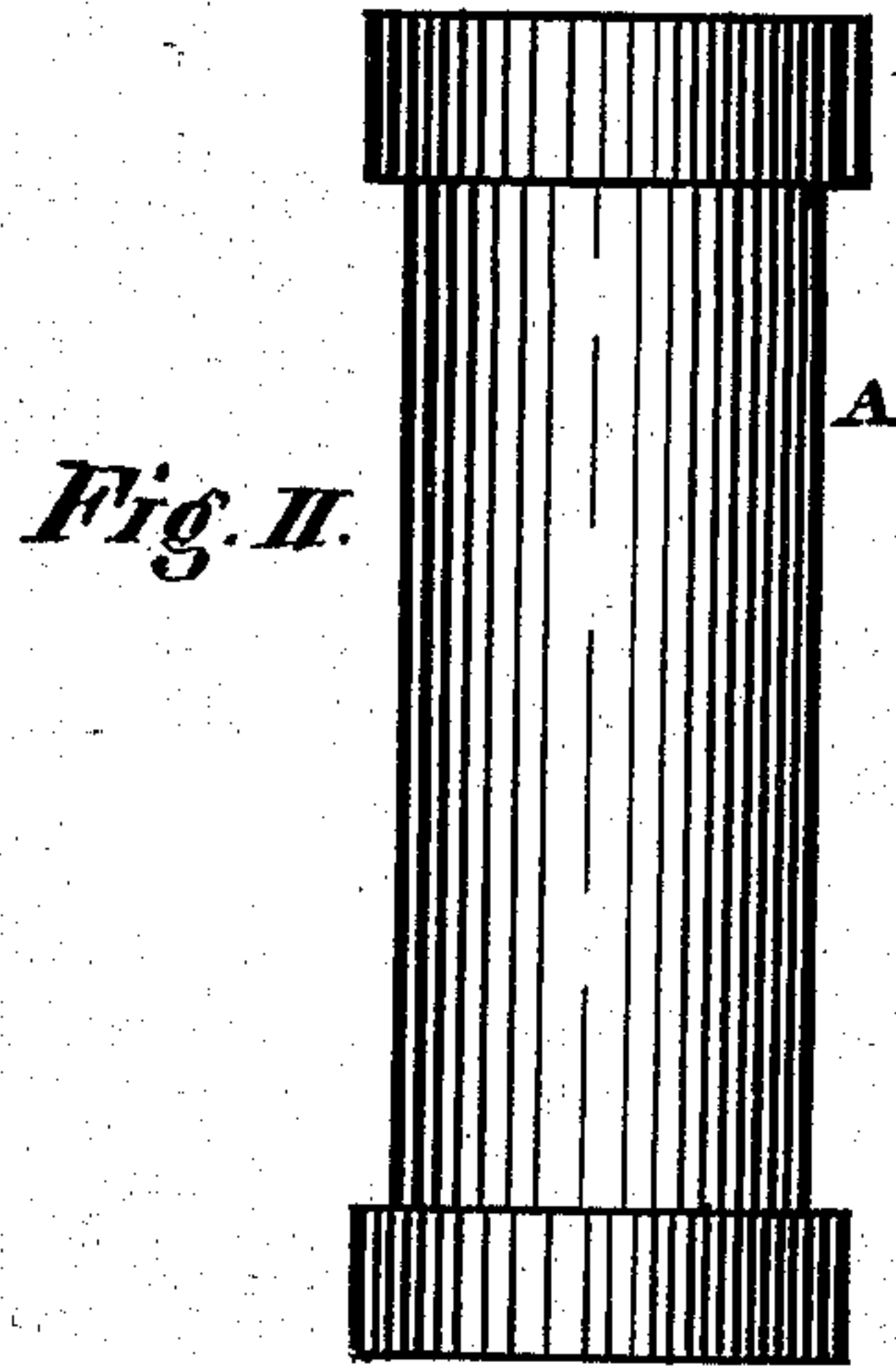
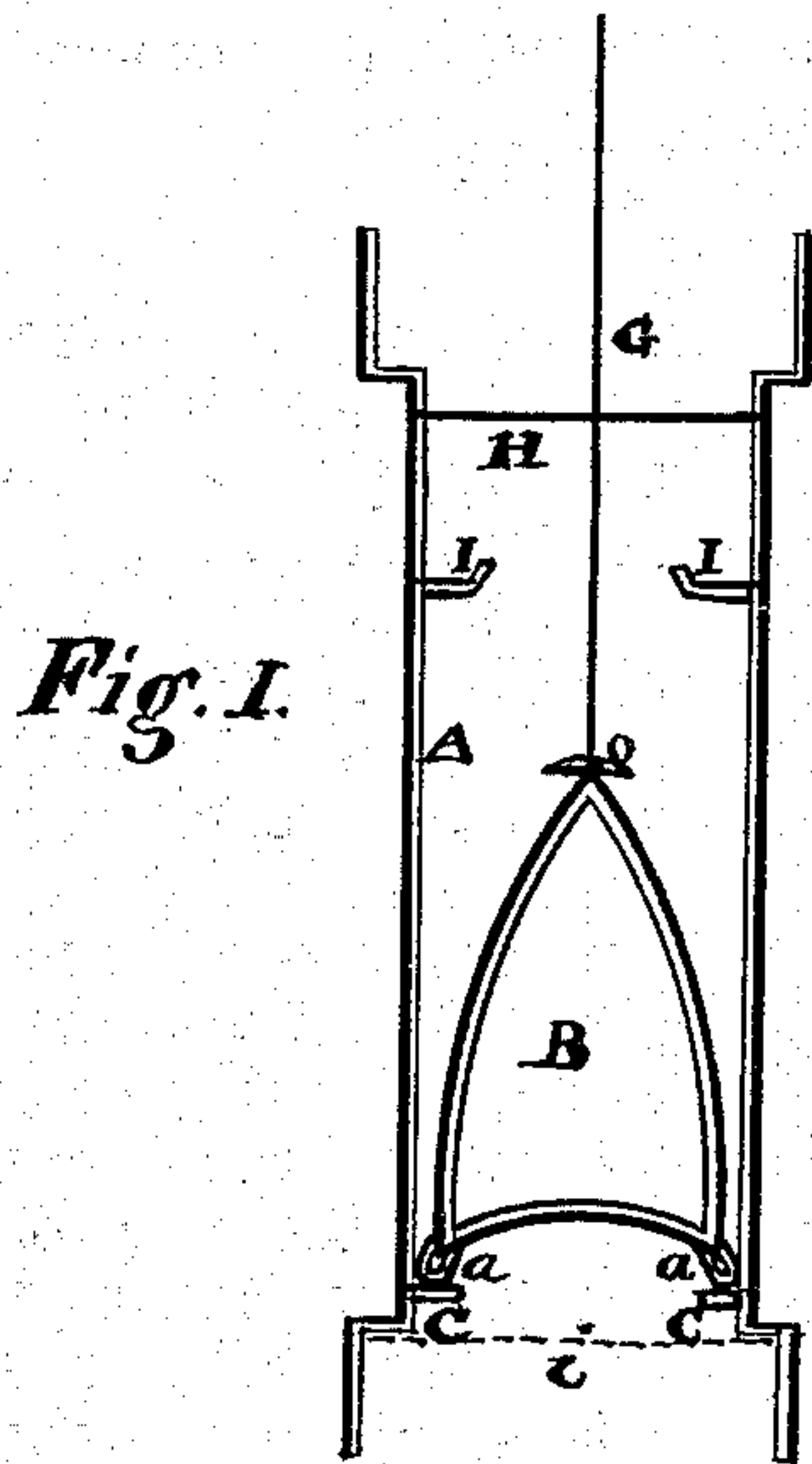


S. C. SALISBURY.
Gas-Regulators.

No. 158,527.

Patented Jan. 5, 1875.



Witnesses
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Inventor
Silas C. Salisbury
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Charles Rogers

UNITED STATES PATENT OFFICE.

SILAS C. SALISBURY, OF NEW YORK, N. Y.

IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. **158,527**, dated January 5, 1875; application filed August 19, 1874.

To all whom it may concern:

Be it known that I, SILAS C. SALISBURY, of the city, county, and State of New York, have invented a new and useful Valve for Regulating the Flow of Gas from the Meter to the Burner; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

The object of my invention is to provide a sure and reliable means for regulating the flow of gas to the burners under varying pressures, so that the entire volume passing the burners will be thoroughly consumed, and at the same time an even and steady light will be produced, and a large per cent. of gas saved which would otherwise be wasted.

Gas-regulators, as heretofore constructed, have been liable to obstruction by deposit precipitated from the gas, and it has heretofore been a principal object with me to construct my regulator with the least possible surface-contact with the seat or inclosing case, so as to render it not liable to derangement from such cause.

My invention consists, first, in a conical valve provided with lugs at its lower end, arranged to keep the valve in proper lateral position at its base, and at a proper distance from its seat while at rest under an adjusted pressure, and a stem moving in a guide to control the upper end, and adjustable rings to adjust and control the distance through which the said valve may move; second, in my said valve, constructed with an inclosing-case adapted to fit inside of the service-pipe.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure I is a longitudinal vertical section of my regulating-valve, fitted to be inserted between two ends of the service-pipe. Fig. II is a side elevation of the same. Fig. III is a longitudinal section of the service-pipe, with the valve-case inserted.

Letters of like name and kind refer to like parts in each of the figures.

A represents the valve-tube, shown in section in Fig. I, which may be of metal or glass,

as desired. B is the valve, made of thin sheet metal, conical in form, with a concave base, and provided with lugs *a a*, secured at the base of the valve. The lugs *a a* extend outward to the inner surface of the tube A, and serve as a guide to the lower part of the valve; also, as a support thereof when at rest, to prevent the valve from closing entirely and cutting off the flow. C is an adjustable ring, which fits closely to the inner part of the tube, just below the base of the valve, and upon which the valve-lugs *a a* rest when the valve is not raised by the pressure of gas. I is also an adjustable ring, placed at a suitable distance above the ring C, to determine the distance the valve is allowed to rise. G is a valve-stem, made very small, and secured to the upper end of the valve in its center, with its upper end passing through the guide-bar H, which, in connection with the lugs *a a*, always keeps the valve in a vertical position. The dotted line *i* represents a wire-gauze diaphragm across the lower end of the valve-tube, for the purpose of preventing any particles of carbon from passing into the valve and clogging the same. The valve is supported by the lugs, the latter of which rest on the adjustable ring, so as to leave a space sufficient to allow the required quantity of gas to pass through to the burner. But when more burners are lighted the pressure is increased by the increased flow of gas, so that the valve is raised just sufficient to allow the required quantity to pass through. By this means a regular and undeviating pressure is obtained, which prevents any flickering or blowing of the gas as it escapes from the orifice of the burner, and at the same time much more perfect combustion is obtained, and a saving of from twenty to thirty per cent. of gas is secured.

It will be perceived that as the flow of gas increases the valve rises, floating, as it were, in the column of gas, and as the pressure increases the valve will approach the ring I, and gradually reduce the gas-space and thereby check the flow, so as to produce a perfectly regular pressure at the burner-orifice. In order to graduate weight of the valve to the existing pressure in the service-pipe, I employ small weights O, one or more of which may be placed upon

the valve-stem. In practice, I graduate these weights so that they are equivalent to the gas-pressure in tenths of inches, and it is therefore easy to adjust any valve to the pressure in any service-pipe.

To make my invention easy of application to service-pipes, especially those already in place, I make the tube A of thin metal, and in definite sizes, to correspond with and fit the interior of regular-sized pipes, and it is therefore only necessary to disconnect the service-pipe at some proper point, and insert the tube A, with its inclosed valve, and again connect the ends of the service-pipe. To insure a tight joint between the tube A and its inclosing-pipe, the former is made a little larger at one end than the other, so that it may be a little wedging as it is forced to its seat, and, if nec-

essary, any suitable cement may also be employed to make said joint tight.

Having described my invention, what I claim as new is—

1. The valve B, provided with a stem, G, and lugs *a a*, in combination with adjustable rings C and I, and tube A, to keep the valve in proper position.

2. As a new article of manufacture, a valve, B, provided with a stem, G, and lugs *a a*, adjustable rings C and I, and tube A adapted to fit within the supply-pipe, in the manner set forth.

SILAS C. SALISBURY.

Witnesses:

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