

W. Mallard.
Gas Regulator.

N^o 30,977

Patented Dec. 18, 1860.

Fig. 1.

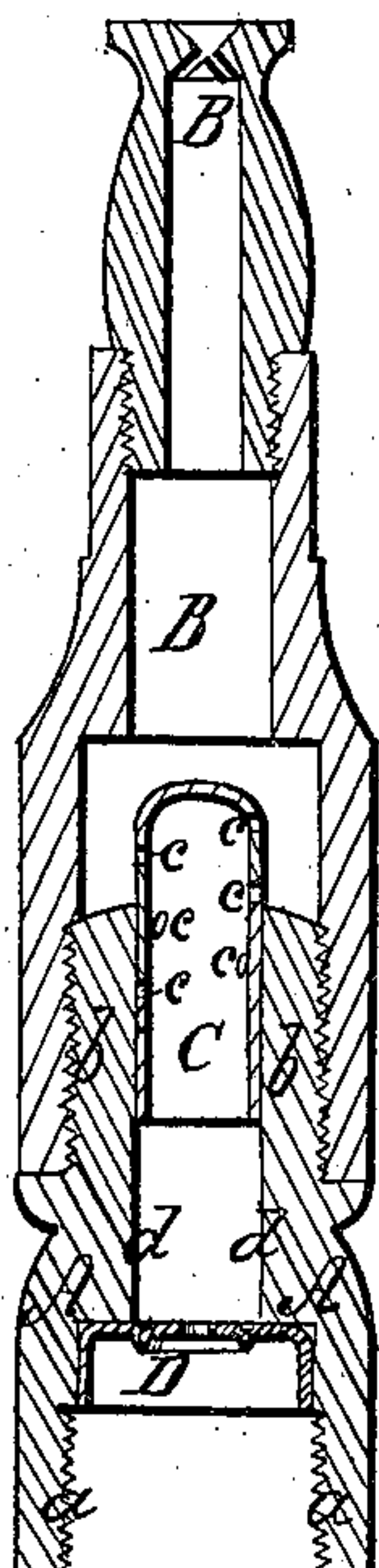


Fig. 2.

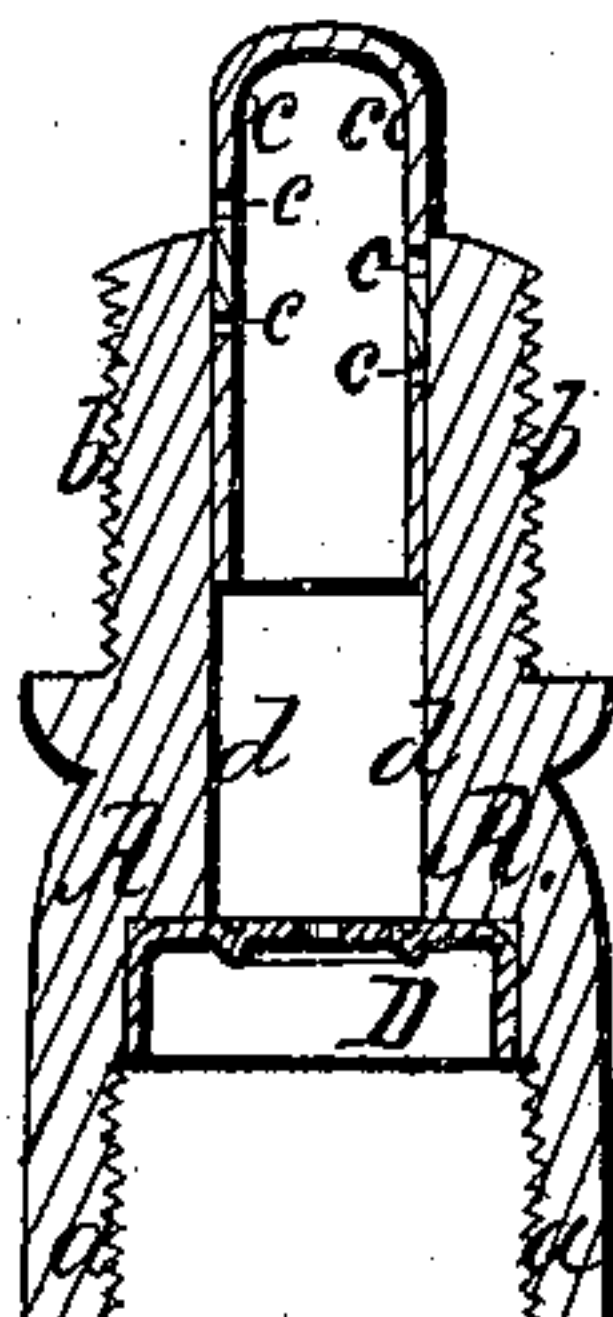
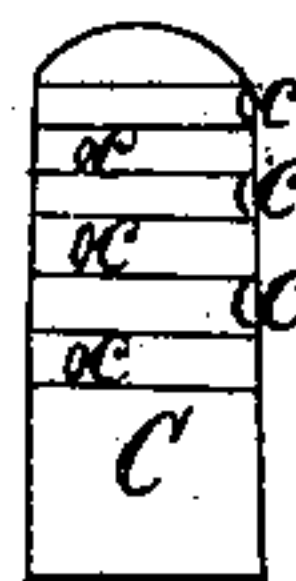


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM MALLERD, OF BRIDGEPORT, CONNECTICUT.

GAS-BURNER REGULATOR.

Specification of Letters Patent No. 30,977, dated December 18, 1860.

To all whom it may concern:

Be it known that I, WILLIAM MALLERD, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and Improved Gas-Burner Regulator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a central section exhibiting the application of my improved regulator to a gas burner. Fig. 2, is a central section of the regulator without the burner. Fig. 3, is an outside view of the adjustable perforated tube of the regulator.

Similar letters of reference indicate corresponding parts in the several figures.

This invention is an improvement on the device patented to me on the 27th day of June, 1854. In that patent the inner tube from which the gas rises to the exterior burner is fixed so that when an increased supply of light or gas is desired it is necessary to remove the burner from the gas pipe and apply a new one having larger orifices in the inner tube. In my aforesaid patent the gas orifices at the head of the inner pipe are likewise all arranged on the same horizontal plane.

My present improvement consists in rendering the said inner tube vertically adjustable and furnishing it with a series of orifices, arranged on different horizontal planes so that the quantity of gas discharged through said inner tube to the burner may be increased or diminished and thus regulated at pleasure by simply raising or lowering the said tube, so as to bring a greater or less number of gas orifices above the head of the socket in which the said tube is set. I also graduate or mark the said tube with suitable lines or figures to denote the quantity of gas that will escape through it when the tube is set to correspond with a given line or figure.

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

In the example of my invention represented in the drawing the regulator is applied in a socket A, arranged below the burner B, the said socket having an inside screw thread *a*, in its lower part by which to attach it to any gas pipe or fixture for use and an outside screw thread *b* on which

to screw the burner. The portion of the socket A, next the burner is bored centrally as shown at *d, d*, in Figs. 1 and 2, of a size smaller than the inner diameter of the lower screwed portion *a* for the reception of the adjustable graduated perforated tube C, which constitutes the principal portion of the regulator. This tube is made of cylindrical form with its lower end open but its upper end closed, and with small apertures or perforations *c, c*, in its sides at regularly increasing distances from its upper end and has its exterior graduated with lines running around it between the apertures *c, c*, as shown in Fig. 3, such lines facilitating its adjustment within the socket A, to which it is fitted so tightly that though it may be moved longitudinally by hand when desired, the gas cannot escape between them to the burner, but is compelled to pass through the apertures *c, c*. The upper end of the socket A, is chamfered off to form a receptacle below the burner for any impurities which might otherwise obstruct the escape of gas through the apertures *c, c*.

D is a perforated inverted cup or diaphragm inserted tightly in the part of the socket A, below where the tube fits, to form a chamber in the lower part of the socket.

The graduated perforated tube C, is adjusted higher or lower according to the pressure of the gas at the locality or elevation at which the burner is to be used or according to the amount of light desired. The gas passes to the burner through those apertures *c, c*, only, which are above the socket A. I propose generally to make the apertures *c, c*, each of a size to permit the passage of one cubic foot per hour at the ordinary or average pressure of gas. When more or less gas is desired, the burner is removed and the tube C raised or lowered to open or close another or others of the apertures as may be requisite.

The tube C, may be used without the cup or diaphragm D, but one or more of such cups or diaphragms forming chambers below the tube may be used with advantage, either with or without valves for the purpose of regulating in some degree the supply of gas, under the variations of pressure of gas to which all burners are from time to time subject. It is obvious that the tube C, may be arranged within the burner itself or within the gas pipe which supplies the burner, also that it may be arranged in any

other than an upright position; or there may be substituted as an equivalent for the perforated adjustable tube C, a stationary tube perforated in a similar manner and fitted
5 with an adjustable sliding tube by which as many of the perforations or apertures in said stationary tube as may be desired, may be opened or closed.

Having thus described my invention, what
10 I claim as new, and desire to secure by Letters Patent is—

1. Making the inner tube C vertically adjustable in its socket A, substantially as
15 herein shown and described, so that the flow of gas through the orifices of said tube may be increased or diminished, and thus

regulated at pleasure, by raising or lowering the said tube so as to bring a greater or less number of the orifices above the head of the socket, all as set forth. 20

2. The arrangement of the escape orifices of said tube C on varying horizontal planes as and for the purpose set forth.

3. The exterior graduation of said tube C as shown and described so that the quantity
25 of gas which issues through the orifices when the tube is set to any given height, will be indicated to the eye, all as herein set forth.

WILLIAM MALLERD.

Witnesses:

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