

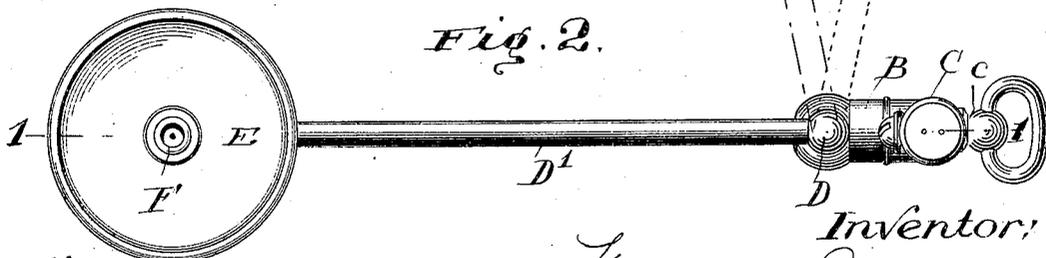
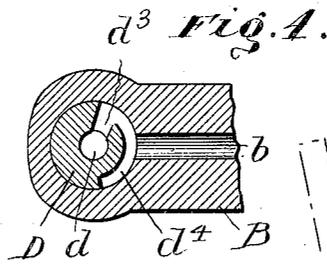
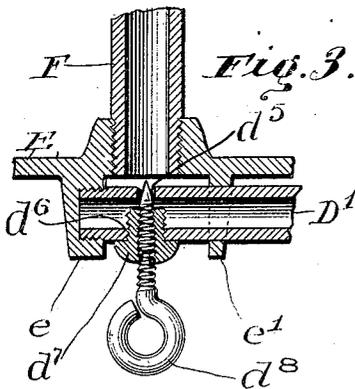
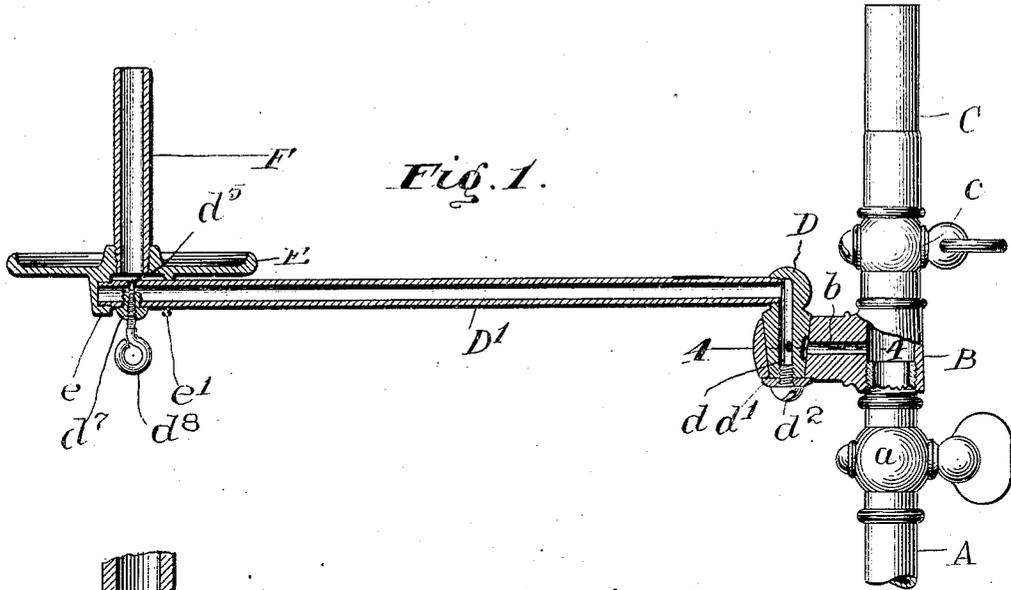
No. 769,806.

PATENTED SEPT. 13, 1904.

T. SMITH.
BUNSEN BURNER.

APPLICATION FILED DEC. 22, 1903.

NO MODEL.



Witnesses:
 Chas. O. Shurway
 Russell Wills

Inventor:
 Theodore Smith
 by H. Peter
 July.

UNITED STATES PATENT OFFICE.

THEODORE SMITH, OF CHICAGO, ILLINOIS.

BUNSEN BURNER.

SPECIFICATION forming part of Letters Patent No. 769,806, dated September 13, 1904.

Application filed December 22, 1903. Serial No. 186,228. (No model.)

To all whom it may concern:

Be it known that I, THEODORE SMITH, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bunsen Burners, of which the following is a specification.

My invention relates to certain new and useful improvements in Bunsen burners; and its object is to produce a device of this class which shall have certain advantages which will appear more fully and at large in the course of this specification.

To this end my invention consists in certain novel features of construction, which are clearly illustrated in the accompanying drawings and described in this specification.

In the aforesaid drawings, Figure 1 is a vertical longitudinal section of my improved burner, showing it supported upon the end of an ordinary gas-fixture, the section being indicated by the line 1 1 in Fig. 2. Fig. 2 is a plan view. Fig. 3 is an enlarged detail section of the lower part of the burner proper, the line of section being the same as that of Fig. 1; and Fig. 4 is a detail horizontal section in the line 4 4 of Fig. 1.

Referring to the drawings, A is the end of a suitable gas-fixture or supply-pipe having a stop-cock *a* of the ordinary form. This pipe may of course be in any suitable form. It may be a portable gas-lamp, wall-fixture, or other gas-bracket when it is convenient to use a device of this class. To the upper end of this supply-pipe is secured a T B, at the upper end of which is secured an ordinary gas-burner C, having the usual stop-cock *c*. The gas-burner C may be dispensed with, as it forms no part of my invention, but may be very conveniently used in connection with the present invention. In the laterally-extending portion of the T member B is swiveled a stem D, which is centrally perforated at *d* and secured in place in the T member by a washer *d'* and screw *d''*. This stem, it will be noted, is conical, after the manner of an ordinary gas-cock, so that wear can be taken out by the screw *d''*. A pipe D' extends radially from the stem D at its upper end and communicates with the central perforation,

and this pipe serves as a support for the burner proper. The stem is provided with a radially-extending perforation *d''*, which communicates with the central perforation D', and a circumferential groove *d'''* is provided in the same plane and communicating with the radial perforation *d''*. This groove is adapted to register with a central perforation *b*, which extends through the laterally-extending portion of the T member B. It is to be noted that the groove *d'''* extends through approximately one hundred and eighty degrees of the circumference of the stem D, and consequently registers with the perforation *b* when the pipe D' is in line with the laterally-extending portion of the T member B and remains in registration therewith as the pipe is swung in either direction until a position of ninety degrees to the said laterally-extending portion is reached. If, however, the pipe is swung more than ninety degrees from a position in line with the laterally-extending arm of the T member, the groove moves out of registration with the perforation *b*, and consequently the flow of gas through the pipe D' is stopped. In other words, this pipe can be moved about freely through all the positions where it would ordinarily be convenient to use it without affecting the flow of gas; but the gas can be turned off and the flame in the burner checked by merely swinging the burner to a position more than ninety degrees from that shown in solid lines in Fig. 1, and the position which it then reaches is the position which is most desirable to have it when out of use.

To the end of the pipe D' is screwed a plate E, which has downwardly-projecting lugs *e e'*. The pipe D' passes through the lug *e'* and is screwed into the lug *e*, so that this lug performs the double purpose of supporting the plate and closing the end of the pipe D'. A tube F is screwed into a central perforation in the plate E, and this tube forms the main tube of the burner. The pipe D' is perforated at its upper and lower sides near its end in line with the tube F, the upper perforation being indicated by *d''* and the lower one by *d'''*. A screw or plug *d''* is screwed in the lower perforation, and through this screw or plug extends a screw *d'''*, pointed at its end and

adapted to enter the upper perforation d^5 and serve as a needle-valve.

A slight space is left between the lower edges of the plate E and the pipe D', so that 5 air may be drawn into the tube F and mingled with the gas flowing through the opening a^5 . The object of the screw-plug d^7 is to make a gas-tight joint between the screw d^8 and the pipe D', the latter being made of thin 10 material, so that but very fine threads can be made in the perforation. The plug can of course be screwed tightly against the pipe to make a tight joint, and the screw d^8 has a long bearing in the plug, so that it can be moved 15 therein without any danger of leakage.

It will be seen that this burner proper is extremely simple in construction, is very readily taken apart and reassembled for the purpose of cleaning, and is provided with an exceedingly simple and efficient device for adjusting 20 the flow of gas. This simple construction is particularly desirable, for the reason that these burners are designed especially for use by dentists and jewelers, and are made very small 25 in size, Figs. 1 and 2 of the drawings being full-sized representations of the structure.

The needle-valve affords means for regulating the flow of gas to the tube F, so that a proper mixture of gas and air, and consequently perfect combustion, is assured. 30

I realize that considerable variation is possible in the details of this construction without departing from the spirit of the invention, and I do not, therefore, desire to limit 35 myself to the specific form herein set forth.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination with a pipe, of a centrally-perforated

plate having a downwardly-extending lug 40 screwed upon the end of said pipe to close the same, and support the plate, a tube threaded in the perforation in the plate, and in line with perforations in the pipe, an internally-screw-threaded plug screwed into one of the 45 perforations, and a pointed screw, threaded in said screw-plug and adapted to be screwed into or out of the other of said perforations in the pipe.

2. In a device of the class described, the combination with a suitable supply-pipe, of a laterally-extending centrally-perforated member secured thereto, a centrally-perforated stem swiveled in said member, a radial perforation extending from said central perforation 55 to the periphery of said stem, a semi-circumferential groove upon said stem adapted to register with the central perforation in said member, a tube supported by said stem and communicating with the central perforation 60 thereof, said tube being perforated on its upper and lower sides, near its end, a plate with downwardly-projecting lugs thereon, secured to the end of said tube, a burner-tube supported by said plate and in line with the upper 65 perforation in said tube, a plug in the lower perforation in said tube, and a pointed screw passing through said plug and adapted to enter the upper perforation in said tube to serve as a needle-valve. 70

In witness whereof I have signed the above application for Letters Patent at Chicago, in the county of Cook and State of Illinois, this 8th day of December, A. D. 1903.

THEODORE SMITH.

Witnesses:

CHAS. O. SHERVEY,
RUSSELL WILES.