(No Model.)

H. A. FRY.

GAS BURNER.

No. 515,669. Patented Feb. 27, 1894.

Fig. 1.

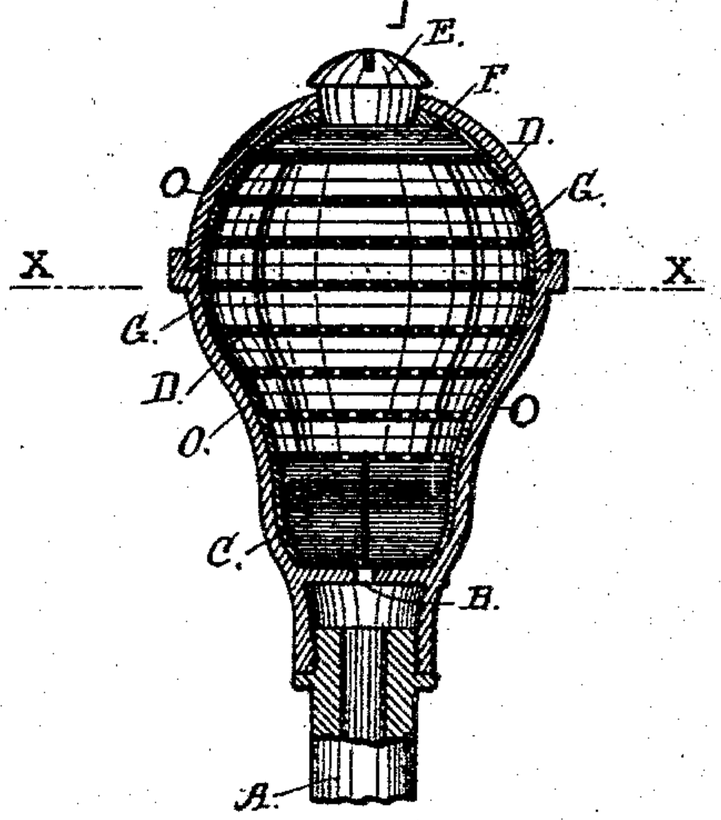
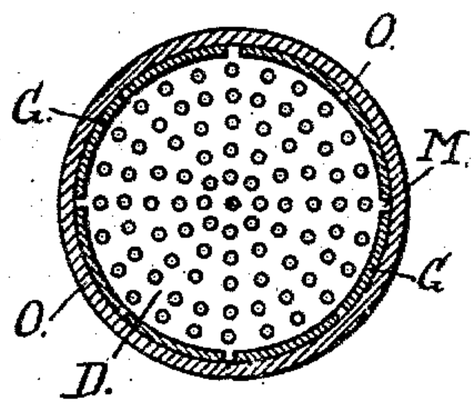


Fig. 2.



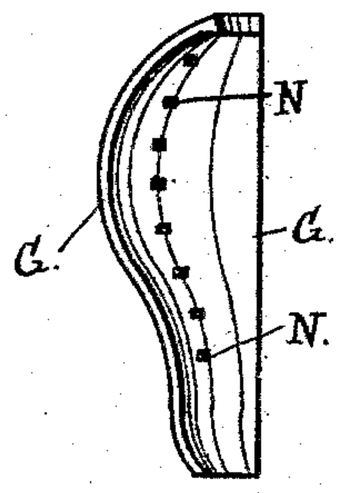


Fig. 3.

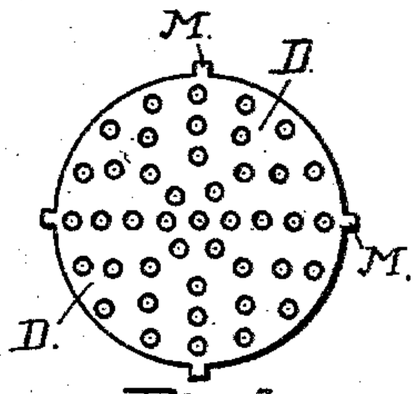


Fig. 4.

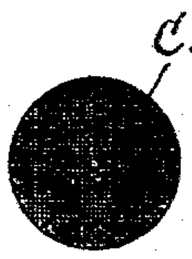


Fig. 5.

Witnesses:

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HENRY A. FRY, OF SAN FRANCISCO, CALIFORNIA.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 515,669, dated February 27, 1894.

Application filed February 23, 1893. Serial No. 463,389. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. FRY, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented an Improved Gas-Burner, of which the following is a full specification.

My invention is an improvement in that class of gas-burners which are especially designed and adapted for heating the gas before reaching the flame, for the purpose of increasing its combustibility and thereby producing a higher degree of illumination.

The details of construction and combination of parts are hereinafter described and shown in accompanying drawings in which—

Figure 1 is a central longitudinal section of my burner, normal size. Fig. 2 is a cross section on line *x*—*x* Fig. 1. Fig. 3 is a perspective view of one of the longitudinal sections of the heat-conductor or inner shell of the burner. Fig. 4 is a plan view of one of the perforated gas-heating plates arranged within the burner. Fig. 5 is a plan view of one of the wire-gauze disks which are also arranged within the burner.

The pear-shaped body O, of the burner is a thin metal (preferably brass) shell, and, as shown in Fig. 1, it is divided transversely, or in other words, made of two parts, which are suitably secured together by a gas-tight joint. Said body O, is provided with a gas passage B, at the bottom, which is so small or narrow as to hinder an undue rapidity of flow of gas, so as to allow only such quantity of gas to pass as can be duly heated and mixed in the chamber of the burner, without danger from explosion. The body O, is further provided with a lining or inner shell G of like form, which serves as a heat-conductor as hereinafter described. This shell is formed in longitudinal sections (see Fig. 3) which are made of some good heat-conducting material, such as steel, and of such dimensions as to fit loosely within the body O, in order to allow a certain due degree of expansion by heat. Each section of the heat-conductor G, has a series of apertures or sockets N, as shown best in Fig. 3, which holes receive corresponding projections M, (Figs. 2 and 3) formed on the edges of perforated metal disks or plates D. The latter are some eight in number, and arranged horizontally and equidistantly, one above another, as shown in Fig. 1. The holes in the series of disks D, are largest in the lowest one and smallest in the upper one, in other words, the diameters of the holes gradually decrease from the bottom disks D, so that the flow of gas is retarded more and more and is hence more intimately mixed as it passes upward to the tip E.

Below disks D, in the bottom of the gas chamber, is a series of wire-gauze disks C—say ten or twelve in number—which are superposed and in close contact with each other as well as with the lining G. Similar disks F, some five or six in number are arranged above the disks D, in the top of the gas chamber, as shown.

The aforesaid tip E, is made of some metal which is a good conductor of heat, and, being in contact with the shell or lining G, as shown, the latter as well as the plates D, become heated by conductivity, to a comparatively high degree. The same is obviously true to a less extent of the gauze disks C and F. It is therefore apparent that the gas passing through the body of the burner to the point of combustion (E) is not only intimately mixed so as to acquire homogeneity, but also becomes heated to a degree but little below the point of combustion, so that when it reaches the flame its carbon particles are in condition to quickly incandesce and thus be perfectly consumed, so that a maximum degree of illumination is obtained.

What I claim is—

1. In a gas burner, the combination, with a heat-conducting part G, having sockets as specified, of perforated disks D, arranged transversely and having projections adapted to enter said sockets, substantially as shown and described.

2. In a gas burner, the combination, with the hollow body and heat-conducting shell, or lining, therefor which is in contact with the body as shown, and provided with sockets as specified, of a series of superposed but separated perforated disks having projections which enter said sockets, and a metal tip which is in contact with both the body and its lining, as shown and described.

3. In a gas burner, the combination, with

the hollow body O, of an inner shell or heat-conducting lining G, composed of longitudinal sections which are fitted loosely together, and a metal tip is in contact with the upper extremities of the lining sections and body, as shown and described.

4. The improved gas burner composed of the hollow body, the heat-conducting sectional lining having sockets and conforming to and lying in contact with the body as shown, a series of superposed but separated, perforated disks having projections which enter said sockets, series of wire-gauze disks superposed and arranged at bottom and top of the burner chamber, and the metal tip which is in contact with the body and lining as shown and described.

HENRY A. FRY.

Witnesses:
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