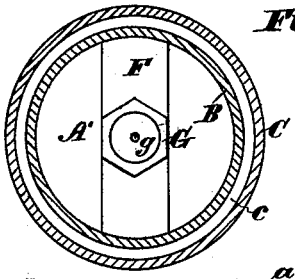
W. R. PARK.

Hydrocarbon Gas-Lamp.

No. 204,448. Patented June 4, 1878.

Fig. 2



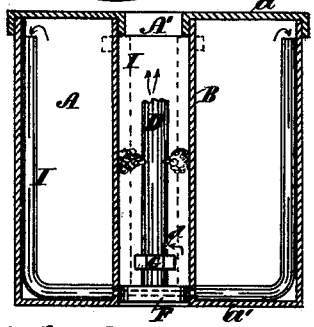


Fig. 3

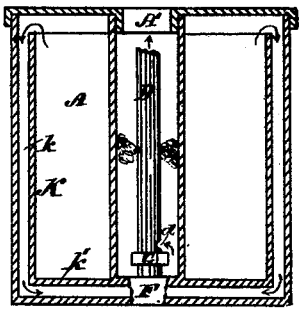


Fig. 4

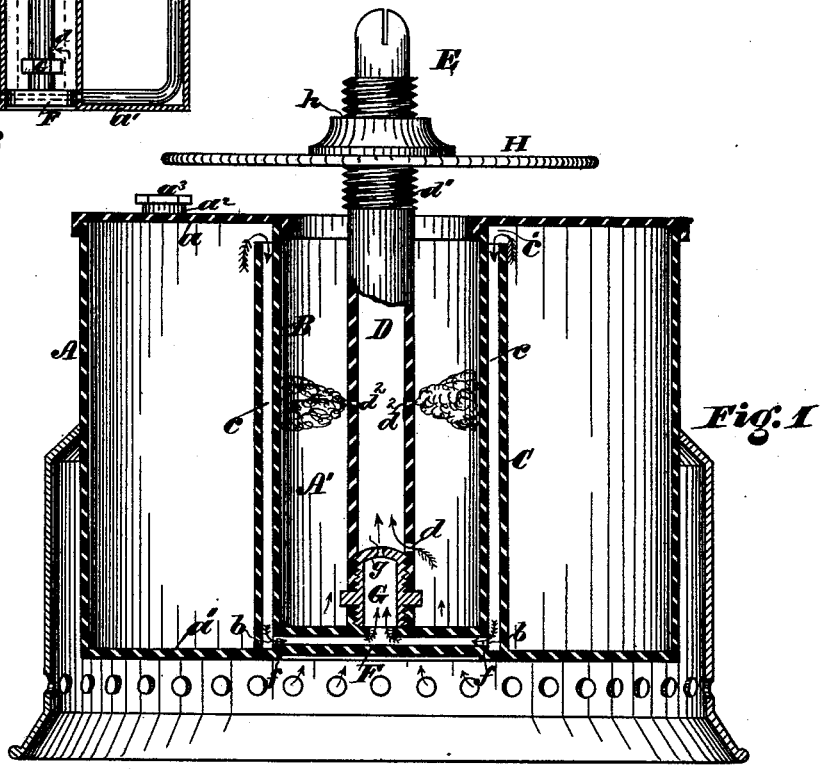


Fig. 1

WITNESSES:

Saml. J. Vanstavoren

Jos. B. Connolly

INVENTOR

William R. Park

By Connolly & Bro,

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM R. PARK, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN HYDROCARBON-GAS LAMPS.

Specification forming part of Letters Patent No. **204,448**, dated June 4, 1878; application filed January 31, 1878.

To all whom it may concern:

Be it known that I, WILLIAM R. PARK, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Hydrocarbon-Gas Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a longitudinal vertical section of my invention. Fig. 2 is a detail horizontal section, and Figs. 3 and 4 modifications, of my invention.

My invention has relation to a lamp in which the vapor of hydrocarbon fluids or gas generated therefrom is employed for the purpose of supplying flame with combustible material, and in which such vapor or gas is obtained by the application of heat to such fluid; and my improvement consists, essentially, in the special construction, combination, and arrangement of parts hereinafter set forth, having reference particularly to the provision of a special passage for the exit of the gas from the fluid-reservoir to the mixing-chamber, and in the means provided for applying the heat required to produce vaporization or generation to the walls of a central well or passage in the fluid-reservoir.

Referring to the accompanying drawing, A designates the hydrocarbon-fluid chamber or reservoir, having a central bottomless well or passage, A′, the sides of which are composed of a cylinder, B, whose upper and lower edges are secured to the top and bottom, respectively, of said reservoir. C is another cylinder, concentric with and surrounding the cylinder B, leaving an annular space, *c*, between them. The cylinder C is fastened to the bottom a^1 of the reservoir A; but its upper edge terminates short of the top *a*, so as to leave an opening, *c′*, to the passage *c* between the cylinders B and C.

D is the mixing-chamber, composed of a pipe terminating in a burner, E. The mixing-chamber D is sustained upon a hollow bridge or cross-piece, F, which has openings or passages *f*, registering with openings *b* in the cylinder B, thus forming a passage from the space *c* to the interior of said mixing-chamber. *d* are openings for the admission of air to the mixing-chamber, and d^2 are openings for the issuance of gas-jets designed to play upon the cylinder B, as hereinafter set forth.

G is a hollow combining-nut or union, connecting the mixing-chamber D with the bridge F, said nut having an upper blank end, *g*, with a central needle-point opening for the passage of gas or gaseous vapor. H is a disk having an internal thread, *h*, adapted to the male thread d^1 on the mixing-chamber, and by means of which said disk is rendered vertically adjustable.

The operation is substantially as follows: The reservoir A is packed with fibrous material, which is duly saturated with hydrocarbon fluid admitted through the opening a^2, said opening being then closed by means of a screw-stopple, a^3. Heat being applied in any suitable manner to the reservoir A, as by holding a lighted torch close to one of its sides, the liquid within generates gas or a gaseous vapor. This gas or vapor rising to the surface finds its way by its expansive force to the passage *c*, and thence through the bridge F and combining-nut C to the mixing-chamber D. Here it mingles with air and passes up to the burner, supplying the latter with combustible material for illuminating purposes. A portion of such gas or vapor issues through the openings d^2, forming jets, which play upon the cylinder B, and, being lighted, supply heat sufficient to continue the vaporization of the liquid or generation of gas within the reservoir A.

The disk H prevents the jets from playing upon or interfering with the burner E, and by its reflecting properties, which cause it to radiate its heat downwardly, assists the vaporization or generation proceeding within the reservoir A.

A modification of the annular passage-way *c* may be obtained by the substitution of a pipe or pipes, I, as shown in Fig. 3, for the cylinder C, said pipe or pipes passing either inside or outside of the cylinder B, communicating, however, in either case with the upper part of the reservoir and with the hollow bridge F.

Still another modification is shown in Fig. 4, wherein a cylinder or wall, K, stands just

within the wall of the reservoir A, leaving a narrow annular space, *k*, for the passage of the gas, which proceeds from said space beneath a false bottom, *k'*, to the bridge F.

What I claim as my invention is—

1. The reservoir A, having a central well-opening, A', said opening extending from top to bottom of the reservoir, and forming a through passage for air admitted below said bottom, and a passage-way, *c*, for the exit of the gas, leading from the upper part of said reservoir to a mixing-chamber or pipe located in said central opening, substantially as shown and described.

2. The combination of reservoir A with the concentric cylinders B C, having the space or passage *c* and inlet and outlets *c'* and *b*, respectively, substantially as shown and described.

3. The combination of reservoir A, hollow bridge F, combining-nut G, and mixing-chamber D, substantially as shown and described.

4. In combination with a reservoir, A, having central passage A', extending all the way through said reservoir from top to bottom, the mixing-chamber or gas-pipe D, having gas-jet orifices d^2, for the purpose of playing upon the cylinder B, substantially as shown and set forth.

5. In combination with the reservoir A, having central passage A' and mixing-chamber or gas-pipe D located therein, and formed with jet-openings d^2, the threaded adjustable disk H, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of January, 1878.

WILLIAM R. PARK.

Witnesses:

GEO. C. SHELMERDINE,

SAML. J. VAN STAVOREN.