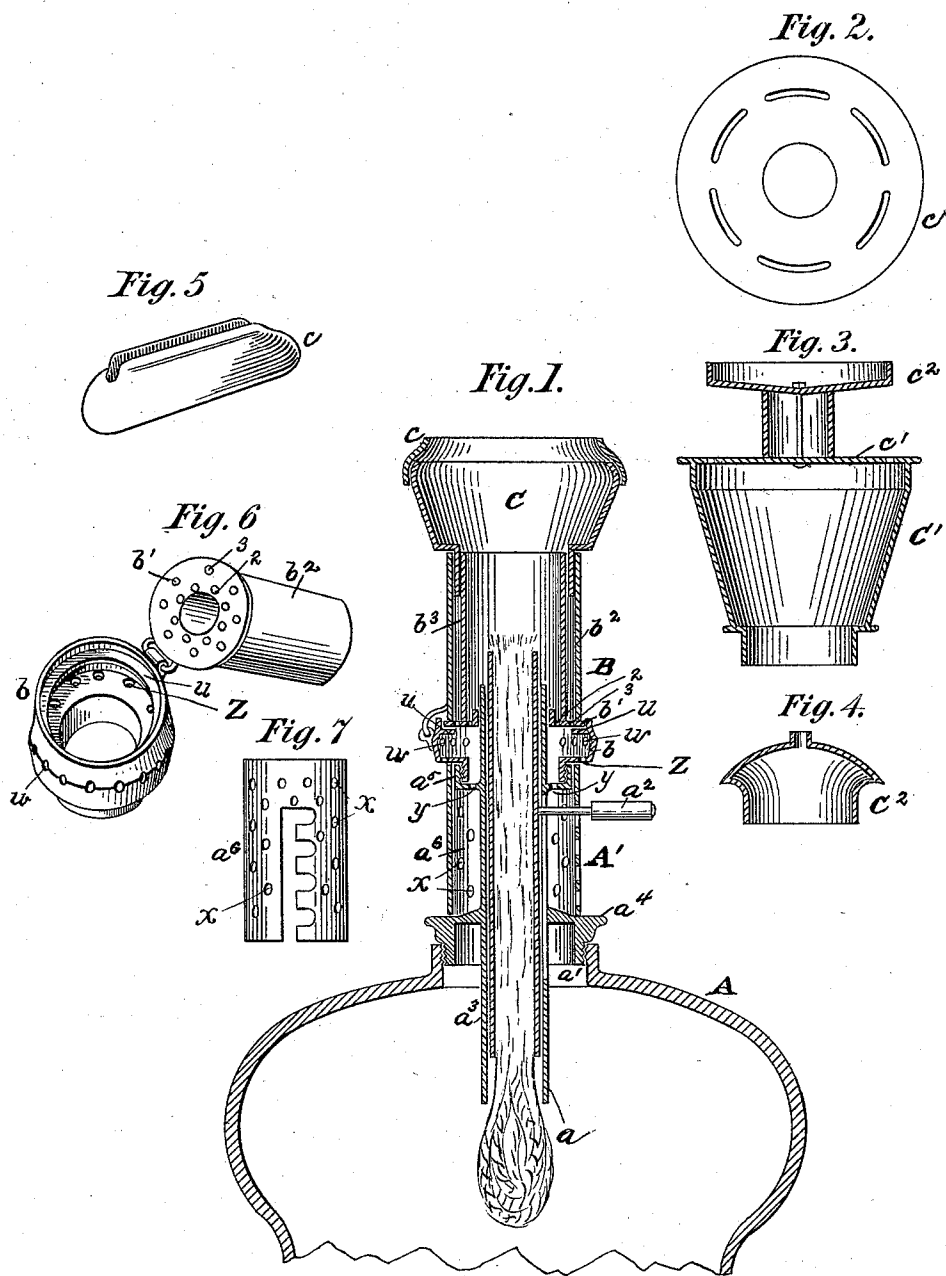


(No Model.)

E. CAMMERER.
GAS GENERATING COAL OIL BURNER.

No. 533,273.

Patented Jan. 29, 1895.



Witnesses

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UNITED STATES PATENT OFFICE.

EBERHARD CAMMERER, OF LOUISVILLE, KENTUCKY.

GAS-GENERATING COAL-OIL BURNER.

SPECIFICATION forming part of Letters Patent No. 533,273, dated January 29, 1895.

Application filed May 21, 1894. Serial No. 511,912. (No model.)

To all whom it may concern:

Be it known that I, EBERHARD CAMMERER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Gas-Generating Coal-Oil Burners; 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 appertains to make and use the same.

The object of my invention is to provide a burner for coal oil by the use of which lamp chimneys may be dispensed with and a bright flame produced either for lighting or heating purposes without smoke or smell. I accomplish this by the novel construction and arrangement of parts hereinafter described, specifically set out in the claims and fully illustrated in the accompanying drawings, in which—

Figure 1 is a transverse vertical section of a burner constructed according to my invention as employed for lighting purposes. Fig. 2 is a detail of a top plate of a burner employed for heating purposes. Fig. 3 is the top piece of a burner used for heating purposes shown in vertical section. Fig. 4 is a modification of the top piece of a burner used as a cigar lighter or taper. Fig. 5 is a detail view of a tip used on a burner for lighting purposes. Fig. 6 is a detail view, in perspective, of the gas generating portion of my burner, and Fig. 7 is a detail view of the sleeve that supports the wick-moving handle.

My burner may be described as consisting of three main portions, a wick managing device, a gas generating device and a gas chamber.

A represents the bowl of a lamp.

A' represents the wick managing device, which consists of a wick tube a , adapted to receive a candle wick, to which tube is attached a handle a^2 ; a guide tube a^3 , fitting snugly around the wick tube, and having a vertical slot in one side in which the handle of the wick tube works, and an encircling sleeve a^4 , provided with perforations or air-holes a^5 having a vertical slot, corresponding to the slot in the guide tube, with notches on one side of the slot as shown. Firmly at-

tached to the guide tube, at a suitable distance from the bottom is a screw threaded cap a^4 , adapted to engage a threaded aperture in the lamp bowl, and, near its top an encircling socket or cup a^5 , screw-threaded on its inner surface and having its bottom perforated with a row of small holes y .

B represents the gas generating portion of my burner and consists of an air chamber b having a central circular aperture in its bottom adapted to admit the guide tube a^3 , and a cylindrical projection below the aperture, screw threaded on its outer surface and adapted to engage the screw thread in the socket a^5 . The air chamber b , which is preferably cylindrical in transverse section, has its bottom perforated with a row of holes z around the central aperture through which the tube a^3 passes and said air chamber b is of such diameter that these holes will be outside the top of the socket a^5 . Its sides are also perforated by a row of air holes w and it is furnished on its interior surface near its top with an encircling flange or bench u adapted to serve as a seat for a cap b' which is hinged to it and which has a central circular aperture adapted to admit the tube a^3 . Cap b' is perforated with two circular concentric rows of air holes 2 and 3 and upon it are erected, and fixedly attached to it, two concentric cylinders b^2 and b^3 , the latter of diameter sufficient to include the inner row of air holes 2 and the former of sufficient diameter to inclose the outer row of air holes 3, thus leaving space around the inner cylinder b^3 for conveying air to the gas receiver C, which is a hollow body with a cylindrical downward projection adapted to fit snugly within the top of the outer cylinder b^2 .

The receiver C is preferably made in the shape of a cone flattened at the sides until it forms a narrow longitudinal opening adapted to receive a flame tip c seen in detail in Fig. 5, which fits closely over it and is provided through its length with a continuous narrow flame slot, or a row of small holes arranged with small spaces between them.

In preparing my burner for use on a lamp, a round candle wick of sufficient size to fill it closely is arranged in the wick tube; the cap a^4 is screwed into the aperture prepared for

it in the bowl of the lamp, and the sleeve a^6 is passed over the tubes and set on the cap, the slot in it receiving the handle. The air chamber b is then screwed into the socket a^5 , thus holding the sleeve a^6 firmly in place. The guide tube a^3 is of sufficient length to pass through the air chamber b and a short distance into the inner cylinder b^3 of the generating department B. When it is desired to light the burner, the wick is uncovered by means of the hinge as shown in Fig. 6 and the light applied and the hinged top part turned back to the position shown in Fig. 1. Combustion is supported by the air from the chamber b coming up through the inner row of holes y in its bottom and the inner cylinder b^3 , becoming heated by the flame, radiates enough heat to volatilize the air as fast as it rises in the wick. The vapors rise into the gas receiver C where they are mingled with the air passing between the two cylinders and when ignited by a light applied to the aperture in the top c , burn with a bright, steady and inodorous flame, without the use of any chimney.

A frame to hold a globe or shade can be conveniently arranged, if desired, between C and B, or otherwise attached.

When my burner is used for heating purposes a gas chamber C' as shown in Fig. 3 is used. This has a top c' with flame apertures as shown in Fig. 2 and a flame spreader c^2 as shown in Fig. 3.

For a cigar lighter, or a night taper, a gas chamber C^2 , as shown in Fig. 4, is used instead of C. I use a round wick preferably because it makes a more equalized heat and is cheaper and more easily handled.

In using the burner for heating purposes a larger gas chamber C is used so as to get more heat and the use of the flame spreader c^2 is necessary, as the tendency of the flame is to rise to a point in the center. To hold the utensil to be heated, above the flame, a suitable frame should be arranged around the burner.

Having thus described my invention, what

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

1. In combination with a wick tube, having a handle attached to it externally, an exterior guide tube having a longitudinal slot on one side and having attached firmly to it, at a suitable distance from its lower end, a screw cap adapted to fit into an aperture in the lamp bowl, and, at a suitable distance from its upper end, a cup or socket screw-threaded on its inner surface and having perforations in its bottom, and a sleeve having a longitudinal slot in one side corresponding to the slot in the guide tube, with notches in one side of the slot, substantially as described.

2. The combination with a guide tube surrounding a wick tube, the guide tube furnished in its upper part with a socket a^5 , of an air chamber b adapted to be screwed into the socket a^5 , a cap b' , hinged to b , perforated with two concentric circular rows of holes and having attached to its upper surface a cylinder b^3 embracing the outer row of perforations and an interior cylinder b^3 embracing the inner row of perforations, and a gas chamber C having a slotted tip c , substantially as described and for the purposes specified.

3. In a coal oil burner, the combination of a guide tube, an inner wick tube, an air chamber encircling the upper end portion of the guide tube and having two concentric circular rows of air holes in its upper portion, two concentric cylinders supported upon the air chamber, the outer cylinder inclosing the outer circular row of air holes, the inner cylinder the inner circular row of air holes, and a gas chamber fitted to the upper ends of the concentric cylinders and adapted to receive a suitable burner, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

EBERHARD CAMMERER.

Witnesses:

S. D. BROWN,
JNO. B. TILFORD.