J. S. KELLOGG.
Vapor-Lamp.

No. 219,737. Patented Sept. 16, 1879.

Fig. 1.

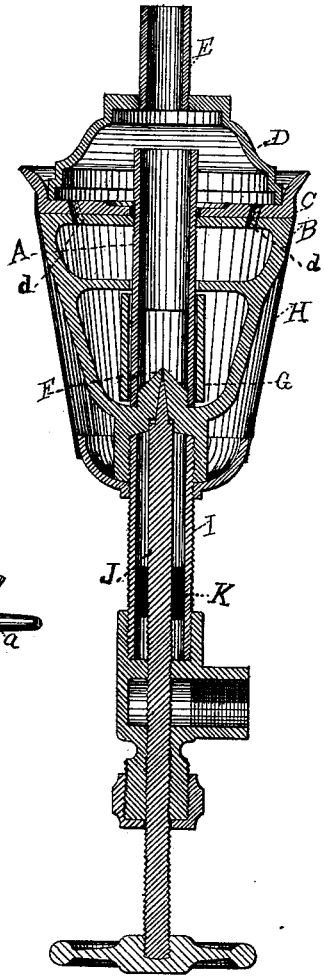
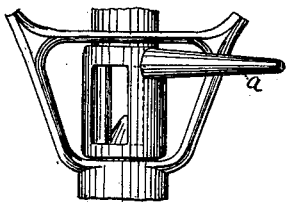


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES S. KELLOGG, OF CLEVELAND, OHIO.

IMPROVEMENT IN VAPOR-LAMPS.

Specification forming part of Letters Patent No. **219,737**, dated September 16, 1879; application filed February 5, 1879.

To all whom it may concern:

Be it known that I, JAMES S. KELLOGG, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Vapor-Lamp for Laboratory Purposes; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention is designed to furnish an apparatus by means of which the vapor obtained from gasoline can be utilized in the laboratory, or by jewelers, druggists, and those who in experimental or manufacturing work require a varying degree of heat, from a mild to a very intense quality, and in a compact and portable form, especially where the common hydrogen gas, such as is supplied in cities, cannot be obtained.

The invention has particularly for its object the use of gasoline-vapor, in combination and adapted to be used with the commonly-known "Bunsen burner," or the principle so well known and used in that form of flame where gas can be secured in sufficient quantity; but in places where this cannot be had it is necessary to use alcohol or oil lamps, which, in addition to being a source of expense and trouble, are wholly inadequate to the demands of the laboratory or manufacturing jewelers' workroom.

It is my purpose to furnish a compact, simple, and powerful burner, which will utilize the vapor generated from gasoline in such a manner, and with suitably-constructed parts, that either the oxidizing or reducing flame required in blow-pipe analyses, heating, and evaporating may be had at pleasure, or such a flame and degree of heat as would be required in light soldering or melting small quantities of the metals; and, also, I have prevented any unsteadiness or flickering of the flame, which would be fatal to the successful working of the device, by inserting in the supply-pipe leading from the reservoir to the needle-pointed valve a packing of porous material, such as felt, asbestus, or other suitable substance, which controls the pressure of the vapor and prevents any expansion and contraction of the gasoline in the tube from being communicated to the flame. Either gasoline, naphtha, or any high volatile substance may be used to obtain the vapor from.

In the drawings, Figure 1 is a sectional view of the burner; and Fig. 2 is a portion of the same, showing the construction and arrangement of the air-regulator for changing the character of the flame as may be required.

Fig. 1, A is a tube screwed into and through the casting B and plate or bed C of vapor-chamber D, and also over the jet-hole or needle-valve F. In this tube are cut two openings, upon opposite sides, just above the needle-valve F. Around this tube, fitting the same so as to be readily moved to the right or left, is a sleeve or cut-off fitted with corresponding openings, so that these may be uncovered to admit air to the vapor, with which it combines, thus completely oxidizing the carbon of the vapor, converting it into carbon dioxide, and increasing the heating power of the flame. When the openings are closed the ordinary or yellow flame is obtained.

H is a hood or shield extending around one-half of the burner, as shown, and preventing the disturbance of the escaping vapor from drafts of air, which would interfere with the working of the device.

In the tube I is a circular wick, K, surrounding loosely the rod J. This wick or packing may be of felt, sponge, asbestus, or any suitable porous material, as I do not confine myself to the particular substance used. This wicking acts as a check to the expansion and contraction of the gasoline within the tube, and effectually prevents any unsteadiness in the flame consequent to such disturbance in the gasoline.

As flames of various sizes are necessary in laboratory practice, I provide a series of graduated tubes fitting within the tube E, and whose interior diameters are of various sizes. These can be inserted within the outer tube as required.

In Fig. 2 is shown the arrangement of the regulating-sleeve, with a handle, *a*, for the purpose of turning the same, as above described. The vapor is generated through heat communicated to the gasoline from the flame by the conductive quality of the metal of which the device is constructed, and is assisted by the downwardly-projecting flames from the ports

d d. Gasoline is admitted to the tube I in the usual manner through suitable connections, where it is vaporized, and escapes through jet-hole or valve-opening F.

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

1. In a lamp for burning gasoline, the combination, with tubes A and E, of the regulator G, as and for the purposes described.

2. In a vapor-burner, the combination of a needle-pointed valve or jet-opening, a tube above the valve, the removable cap D, covering the upper end of the tube, and an additional tube, E, extending centrally from such cap, substantially as described and shown.

3. The tube A, connecting chamber in cap D with shoulder and jet F, having sleeve G, as and for the purposes set forth and described.

4. In a burner for laboratory or like purposes, the regulating collar or sleeve G, the tube A, cap D, and tube E, as and for the purposes described.

5. In a vapor-burner, the combination, with a retort or vaporizing-chamber and a needle-valve and jet-opening, of a shield, H, partly inclosing the jet to prevent atmospheric disturbance, substantially as described and shown.

6. In a vapor-burner, the sleeve or collar G, as and for the purposes set forth and described.

This specification signed and witnessed this 30th day of November, 1878.

JAMES S. KELLOGG.

Witnesses:
OSCAR BALZER,
H. MCL. HARDING.