(No Model.) 2 Sheets—Sheet 1.

E. B. REQUA.

GAS AND LAMP BURNER.

No. 263,581. Patented Aug. 29, 1882.

Fig. 1.

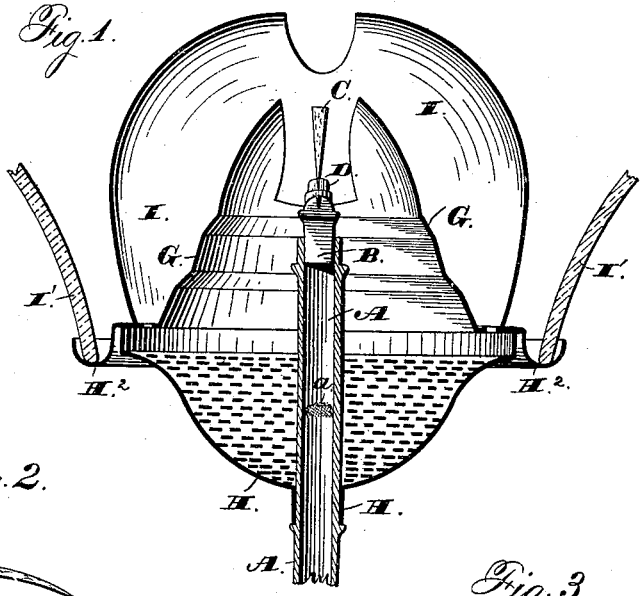


Fig. 2.

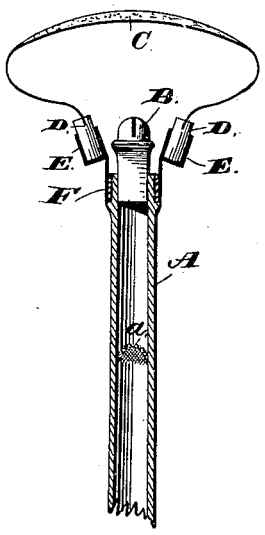
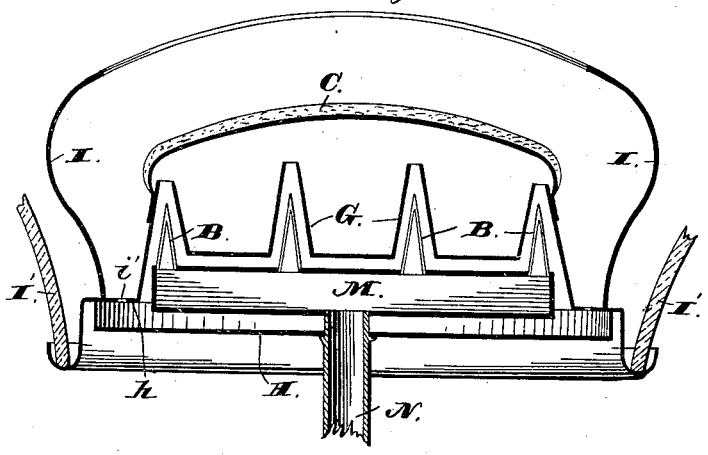


Fig. 3.



Witnesses.
Jas. E. Hutchinson.
William P. Douglas

Inventor.
Elias B. Requa,
By his Attorney,
James L. Norris.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

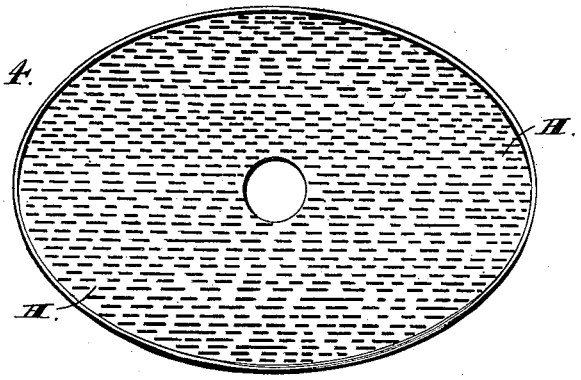


Fig. 5.

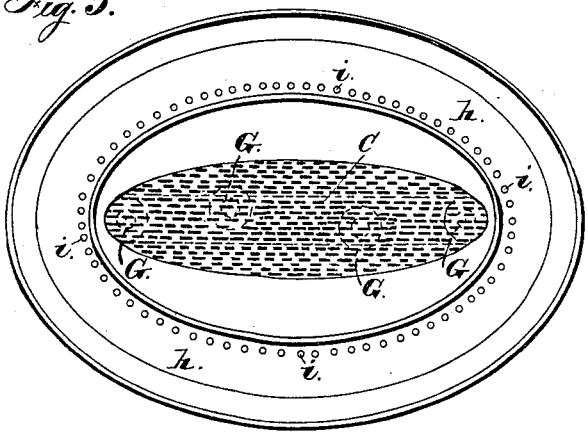
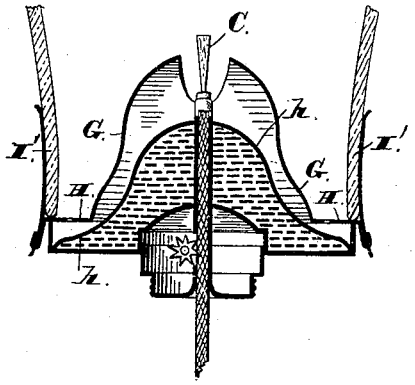


Fig. 6.



Witnesses:

Jas. E. Hutchinson.

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UNITED STATES PATENT OFFICE.

ELIAS B. REQUA, OF JERSEY CITY, NEW JERSEY.

GAS AND LAMP BURNER.

SPECIFICATION forming part of Letters Patent No. 263,581, dated August 29, 1882.

Application filed July 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, ELIAS B. REQUA, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Gas and Lamp Burners, of which the following is a specification.

The object of this invention is to add to the brilliancy of an oil or gas flame by combining therewith a suitable piece of platinum or other substance, which, when heated by the flame, will become incandescent and give out a brilliant light. To such end I combine either with a gas-burner or with a burner for hydrocarbon oils a fixed perforated platinum strip, and provide means for insuring a draft of air for feeding the flame, so as to create a degree of heat sufficient to cause the platinum to become incandescent.

In the annexed drawings, Figure 1 is a vertical section through a gas-burner with attachments for securing the platinum strip in place and for insuring the draft required to feed the flame, and thereby create the required degree of heat. Fig. 2 is a like section taken on a plane at right angles to Fig. 1, the burner and platinum strip supported thereby being shown in this figure. Fig. 3 is a section taken through a multiple gas-burner provided with attachments in accordance with my invention. Fig. 4 is a plan view of the perforated air-distributing plate shown in Fig. 3. Fig. 5 is a top or plan view of the burner shown in Fig. 3. Fig. 6 is a section through an oil-burner provided with my improved attachments.

Referring to Figs. 1 and 2, A indicates the gas-burner, provided with an ordinary tip, B, and inclosing a wire-gauze check, *a*, as usual. The perforated platinum strip or ribbon C, which I employ in connection with this burner, is bent into bow form, and fixed over the tip by securing its ends in the tubes or other suitable supports, D, which are of glass or some other suitable non-conductor of heat. These tubes or supports are held in sockets E, secured to a collar, F, which is fitted upon the burner, whereby the said parts are maintained in place. These non-conducting tubes prevent the incandescent platinum from heating the sockets, and hence avoid any melting of the solder or metal employed in the attachment. It will be observed that the platinum strip or ribbon is supported in the same plane as the flame, where the latter issues from the burner, and, further, that the form, configuration, or shape of the strip or ribbon is the same, or substantially or approximately the same, in a vertical plane as the outline or form of the flame produced by the ignition of the gas or oil at the tip of the burner, whereby the best results are obtained and a brilliant light maintained without liability of carbon being deposited on the strip or ribbon to any appreciable or objectionable extent. In fact, I have found by experiment with pure gas and oil that by my arrangement of the platinum strip or ribbon in relation to the burner and the flame the deposition of carbon is entirely avoided, and hence the brilliancy of the flame is never affected.

In order to induce a strong current of air through the burner attachment, I provide a deflecting-cone, G, which surrounds the tip with its slot just below the platinum ribbon, the said deflecting cone being seated upon a perforated cup-shaped base-plate, H, provided with a sleeve, H′, which is fitted upon the burner. I indicates a glass chimney or flame-protector, which is slotted at the top and seated upon the base H. A glass globe, I′, of any desired configuration, is placed upon arms or a flange, H^2, projecting laterally from the said base-plate, and serves to induce a strong upward current of air. The gas being lighted, a strong current of air will be induced upwardly through the perforated base-plate, and being deflected by the deflecting-cone into the flame will cause the latter to evolve sufficient heat to heat the platinum strip or ribbon, which, being located above the slot, will receive all of the heat and become incandescent.

In the multiple burner shown in Figs. 3 and 5 a series of deflectors or conical air-tubes, G, open at both ends, are located over the gas-burner tips B, which rise from a common horizontal chamber or pipe, M, into which said tips are screwed. This pipe M is supported by and supplied with gas from the pipe N, the gas being distributed by the former pipe into the several burners connected therewith. The perforated platinum strip C, which in this instance is concaved in cross-section and tapered toward its ends, is bent into bow shape and supported by the conical tubes at the ends of

the series. The oblong glass globe or flame-protector I is seated upon the base *h*, provided with the several air-deflecting tubes, said base being provided with perforations *i*, through which the upwardly-inclined current of air rises. A glass globe, I′, is also supported upon arms extending out from the base. This base *h* is supported upon an oval-shaped perforated base or bottom plate, H, which is fitted upon the gas-pipe. When the several gas jets in the multiple burner are lighted the gas under pressure causes the conical tubes to act as blow-pipes, and hence great heat will be evolved. A strong upward current of air will in this instance be also induced upward through the perforated base-plate.

In Fig. 6 I have shown a burner for hydrocarbon oils similar to that heretofore secured to me by Letters Patent, but having the platinum strip C, which will be supported in either of the ways already described, it being secured to the outer deflecting-cone, G. This burner has a perforated base, H, an inner cone, *h*, and a chimney, I′.

I do not claim herein the specific construction of gas-burner described and illustrated in Fig. 3 of the drawings, as such will constitute the subject-matter of a separate application for Letters Patent.

I am aware that vapor-burners have been provided with a platinum wire coiled into conical form, having a socket-piece at the lower end or base, which fits over the jet-burner; but such is not my invention.

I am also aware that cylindrical wires of ordinary metal have been arranged over a gas-burner in a manner similar to my invention; but such differs from mine in that I provide a widened strip or ribbon of platinum, which materially increases the exposition of the platinum to the action of the flame, thereby providing an exceedingly brilliant light, which cannot be obtained by the employment of a cylindrical wire.

What I claim is—

1. The combination, with a burner for gas or oil, of a perforated platinum ribbon located over the burner, substantially as described.

2. The combination, with a burner for gas or oil, of a perforated platinum strip or ribbon extended over the burner, and a deflector for deflecting the upwardly-induced currents of air into the flame for heating the platinum strip or ribbon, substantially as described.

3. The combination, with a burner for gas or oil, of a platinum strip or ribbon extended transversely over the burner in the plane of the flame issuing therefrom, and of a bowed or similar shape which approximates the contour or form of the flame, substantially as and for the purposes described.

4. The combination, with the burner, of the platinum strip located over the same, the deflector for deflecting upwardly-induced air-currents into the flame, the perforated base, and a glass flame-protector, I, substantially as described.

5. The combination, with a burner for gas or oil, of a platinum strip or ribbon extended transversely over the burner in the plane of the flame issuing therefrom, and non-conducting supports for sustaining the ends of the platinum strip or ribbon, substantially as and for the purposes described.

6. The combination, with a burner, of the slotted deflector G, the perforated base H, and the platinum strip located over the burner, and having its ends secured in the glass tubes D, which are held in sockets supported from the burner, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ELIAS B. REQUA.

Witnesses:
WILLIAM P. DOUGLASS,
WM. F. MIDLIGE.