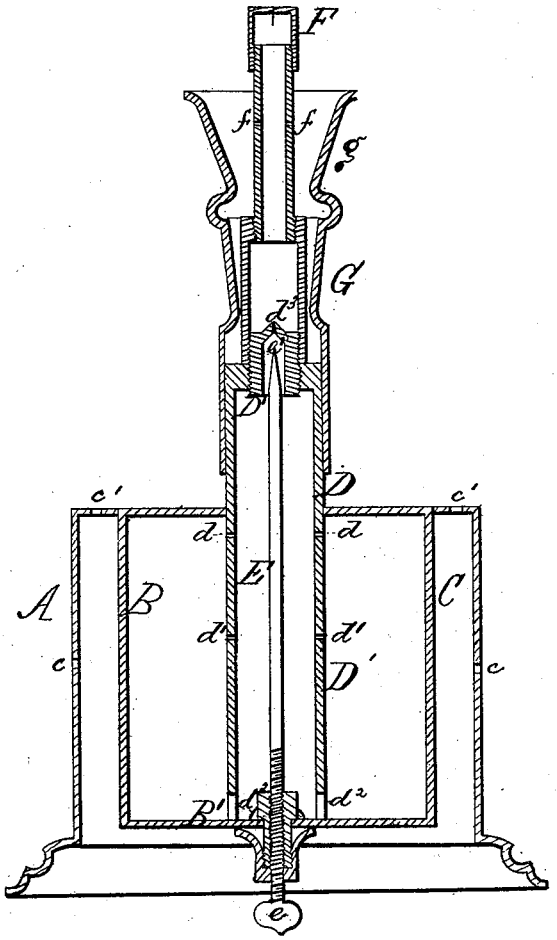
R. W. PARK.

HYDROCARBON VAPOR-BURNER.

No. 191,170. Patented May 22, 1877.



Witnesses

A. A. Connolly

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By

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ROBERT W. PARK, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN HYDROCARBON-VAPOR BURNERS.

Specification forming part of Letters Patent No. **191,170**, dated May 22, 1877; application filed September 6, 1876.

To all whom it may concern:

Be it known that I, ROBERT W. PARK, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Hydrocarbon-Vapor 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 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 sectional view of my invention.

The nature of my invention consists in the peculiar construction, combination, and arrangement of parts, as hereinafter more fully set forth, having reference particularly to the following points: first, to extending the retort down into the reservoir, so that the heat of the former may be conducted directly to the latter, and cause the vaporization of the liquid contents therein; second, to the provision of apertures in the retort-extension, whereby the vaporized oil or gas may pass from the upper part of the reservoir into said retort; third, to the employment of a regulating-screw passing through the body of the reservoir, and operating to adjust the flow of gas from the retort to the burner.

Referring to the accompanying drawing, A designates the shell or outer casing of the lamp, surrounding a reservoir, B, in such manner as to leave an air-chamber, C, having inlet and outlet openings *c c'*, respectively. D represents a retort located above the reservoir B, having an extension, D', which passes down into the said reservoir. Said retort-extension is furnished or formed with apertures *d d*, located near the top of the reservoir, to permit the vaporized oil or gas in the upper part of the latter to pass readily into the retort. Other openings d^1 d^1 are formed in said extension at a lower point, and its lower edge is scalloped or cut away at d^2 for a like purpose, viz., the passage of the vaporized oil from the reservoir to the retort. E represents a screw or threaded spindle, which passes through a threaded opening in the bottom B' of the reservoir B. The lower end of said screw is provided with a thumb-piece, *e*, while its upper extremity tapers to a fine point, *e'*, which centers in a pin-hole, d^3, in the screw-neck D' of the retort. F represents the burner screwed on the neck D', and G a sleeve terminating in a cup, *g*, said sleeve fitting on the retort D, and the cup surrounding the stem of the burner.

The operation is substantially as follows:

The reservoir and retort are both packed with wick, or equivalent absorbent material. Oil is poured into the retort by removing its top or screw neck, the fluid passing down the retort-extension, and through the openings *d* d^1 d^2 into the reservoir. As soon as the packing is thoroughly saturated, the cap or screw neck of the retort is restored to position, and the burner screwed on, the sleeve G with its cup being also placed in position. Heat being applied in any suitable manner to the retort to cause the vaporization of its contents sufficiently to start burning, the gas issuing from the burner (as well as that from the openings *f f* in the stem of the burner) is lighted. The burning jets issuing through the openings *f f*, and striking the cup *g*, communicate a considerable degree of heat to said cup, said heat being conducted by means of the sleeve G directly to the retort D, and from the latter, by means of its extension D', right into the middle of the reservoir B.

The heat thus conducted has the effect of vaporizing the liquid contents of the reservoir, which pass through the openings *d* d^1 into the extension D', and thence into the retort D, where, being subjected to a still higher temperature, they become more rarefied, and issue in a gaseous form through the pin-hole d^3 into the burner F. To regulate the flow of gas into the burner through the pin-hole, the screw E is turned so as to cause its point *e'* to enter or be withdrawn from said hole accordingly as it is desired to diminish or to increase the flow.

What I claim as my invention is—

1. In a hydrocarbon-vapor burner, the retort D, formed or provided with an extension, D', in combination with the reservoir B, said retort and reservoir being relatively arranged, substantially as described, so that the liquid contents of the latter may come in contact with the walls of the former, so as to secure

ready vaporization of the oil, substantially as shown and set forth.

2. In combination with the reservoir B, the retort-extension D′ projected downwardly into said reservoir, and provided with openings *d* for the passage of the vaporized oil or gas, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 31st day of August, 1876.

ROBERT W. PARK.

Witnesses:
W. W. DOUGHERTY,
M. DANL. CONNOLLY.