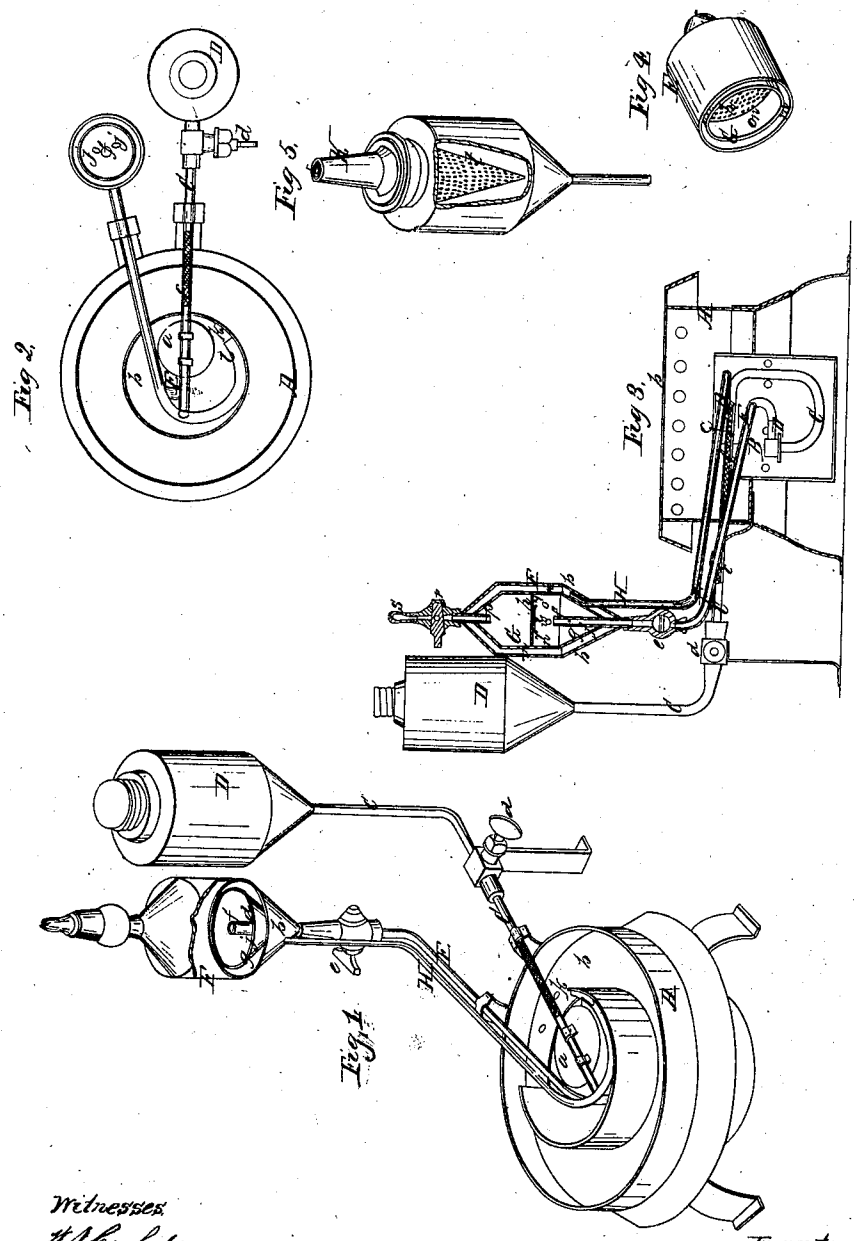
No. 80,980.

PATENTED AUG. 11, 1868.

D. H. LOWE.

HYDROCARBON BURNER.



Witnesses.
H. J. Cambridge
Niles & Robbins

Inventor.
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DAVID H. LOWE, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 80,980, *dated August* 11, 1868.

IMPROVEMENT IN HYDROCARBON-BURNERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, DAVID H. LOWE, of Boston, in the county of Suffolk, and State of Massachusetts, have invented certain Improvements in Petroleum-Stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the interior of a petroleum-stove with my improvements applied thereto.

Figure 2 is a plan representing the interior of the stove, and a portion of the interior of the mechanism forming the subject of my invention.

Figure 3 is a vertical section through the stove, with my improvements in place thereon ready for use.

Figures 4 and 5 are perspective views of the interior of a portion of my improved apparatus.

My invention relates to that class of stoves ordinarily denominated "petroleum-stoves," in which naphtha, gasoline, &c., are employed as fuel, for heating and cooking; and my invention consists in combining with a petroleum-stove an apparatus for generating gas for illuminating purposes, the said apparatus being provided with a receptacle or meter for receiving the gas as it is produced from the naphtha or gasoline employed as fuel to heat the stove; and my invention also consists in attaching a lamp-burner to the reservoir containing the said material used as fuel.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is the stove, of circular form in the interior, near the bottom of which is placed a burner, B, secured to one end of a pipe, C, the other end of which enters the bottom of a receptacle, D, for containing the naphtha, gasoline, or other similar light grade of hydrocarbon-oil, to be used as fuel in heating the stove.

The pipe C is bent around, as shown in fig. 3, and extends over the flame of the burner B, a flat, circular disk, *a*, being interposed, in order to diffuse the rays of heat uniformly upon the lower surface of the kettle or other utensil placed in the hole *b* for its reception, in the top of the stove, by which means the utensil is not injured, as otherwise would be the case if the flame were allowed to concentrate at one point thereon. This pipe C is called the generating-pipe, and is provided with a wire-gauze packing, *c*, to regulate the flow of the fluid down the pipe to the point where it is converted by the heat into gas, a cock, *d*, also being provided for regulating the supply to the packing.

D′ is a short nipple proceeding from one side of the burner B. Over this nipple is screwed the lower end of a tube, E, the upper end of which is provided with a cock, *e*, which is connected with the lower or funnel-shaped end of the reservoir or meter F, for holding the gas as it rises, when produced by the heat of the flame of the burner.

f is another tube, which forms a continuation of the tube E, being screwed into the top of the cock *e*, and passing up within the lower or funnel-shaped portion, *b*, of the meter, and also up into the funnel-shaped bottom, *g*, of an inner receptacle, G, the office of the said tube being to convey the gases into the meter, the dry or pure portion passing through the perforated partition *h*, while the liquid or vapor contained in the gas is deposited and condensed on the under side of a circular plate, *i*, placed directly over and at some distance from the said tube *f*. The condensed portion then runs down to the edge, 7, of the plate *i*, and falls into the funnel-shaped bottom, *g*, of the inner receptacle, and thence, through holes *j*, down the inside of the bottom of the outer receptacle F. From this point it flows down a tube, H, one end of which is connected with the bottom of the receptacle F, and surrounds an inner tube, I, one end of which projects up from the bottom of the said receptacle F into the space between the funnel-shaped portions of the two receptacles, F and G.

The lower end of the outer tube H passes down inside the stove, above and near to the burner, and bends around, as shown in figs. 1 and 2, to the point *k*, where it is closed. The lower portion of the inner tube passes through the outside tube H to a point, *l*, where it terminates, this lower end of this inner tube being left open, so as to allow the dry, pure gas, generated from the heated condensed vapors, to pass up therein, and into the

circular chamber *m*, surrounding the inner receptacle, and thence, through holes *n*, into the space *o*, below the perforated partition *h*.

The dry, pure gas thus produced in the pipes or tubes E and I, is then united, and passes through the perforated partition *h* to the pipe *p*, to which is screwed the gas-cock *r* and burner *s*, by which construction I am enabled to obtain a constant supply of excellent gas for illuminating purposes.

The above-described apparatus can be compactly placed, and a flexible or rigid tube may be conducted to any point where light is desired.

Instead of a double tube, H I, a continuous single tube may be employed for collecting the condensed vapors, and generating therefrom a pure quality of gas, in which case, this tube would be provided with a wire-gauze coil, to regulate the flow of the condensed vapors to the point where they become heated and are converted into dry gas, and when such tube is used, one of its ends must connect with the bottom of the inside of the meter, while the other end of the tube should extend up some distance above its bottom.

The interior of the reservoir containing the naphtha or gasoline is provided with a perforated funnel-shaped plate, *i*, to prevent explosion or accident, and, by making the said plate of the form shown in fig. *b*, so as to extend near the bottom of the reservoir, and providing the top of the reservoir with a cap, an ordinary lamp-burner, K, may be secured thereto, and be used to light the apartment in which the stove is placed.

Claims.

What I claim as my invention, and desire to secure by Letters Patent, as an improvement in petroleum-stoves, is—

The within-described apparatus, for producing gas for illuminating purposes, substantially as set forth.

I also claim the combination of a lamp-burner with the reservoir D, for containing the naphtha or gasoline, substantially as described.

DAVID H. LOWE.

Witnesses:

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P. E. TESCHEMACHER.