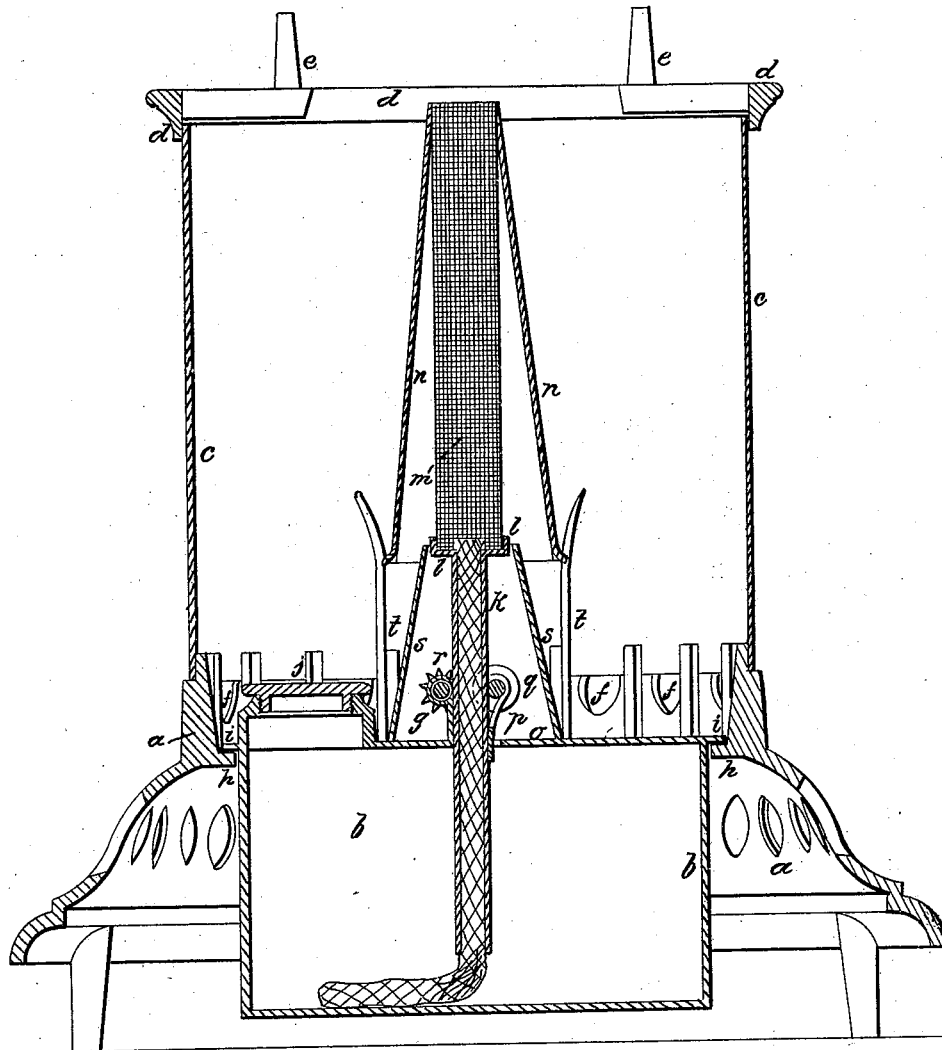


O. F. MORRILL.

Lamp Stove.

No. 55,032.

Patented May 22, 1866.



Witnesses:  
Francis Gould  
W. H. Frothingham.

Inventor:  
Oscar F. Morrill  
By his Atty  
J. B. Crosby.

# UNITED STATES PATENT OFFICE.

OSCAR F. MORRILL, OF CHELSEA, MASSACHUSETTS.

## IMPROVEMENT IN PETROLEUM-STOVES.

Specification forming part of Letters Patent No. 55,032, dated May 22, 1866.

*To all whom it may concern:*

Be it known that I, OSCAR F. MORRILL, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented a new and useful Apparatus for Generating Heat for Culinary and other Purposes; and I do hereby declare that the following, taken in connection with the drawing which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention consists in peculiarities of construction by which perfect combustion of oily or fatty matters is obtained, the invention being more particularly designed for burning crude or refined petroleum, or the products thereof, and the various liquid products from the distillation of coal; and my invention further consists in details of construction by which the aeriform fluids generated by heat from the material being burned are prevented from escaping into the room, and thereby producing disagreeable odors; also, in the details by which any of the liquid escaping from the wick is returned into the reservoir; and, further, in details by which the wick is operated; also, in others by which the part surrounding the wick is conveniently held in place and is easily removed, and in the means by which the reservoir is held in place in its connection with a stand or stove for culinary purposes, so that it is easily detached therefrom for filling, cleaning, &c.

The drawing shows, in vertical section, an apparatus embodying my invention, in which *a* represents a base in which the reservoir *b* is suspended. On the base is placed a metal cylinder, *c*, which upholds a ring, *d*, made with studs or projections *e*, on which any culinary or other vessel may be placed to have its contents heated. The parts *a*, *c*, and *d*, are all capable of easy dismemberment, each from the other, by which access is had to the reservoir *b* and the parts immediately therewith connected.

In the base *a* the openings *f* supply the air needed for combustion, while through any of them the spindle *g*, which operates the wick, may conveniently protrude at the side of the apparatus. The base is made with a flange, *h*, to receive and support the reservoir by its flange *i*. The reservoir is provided with a screw-cap, *j*, through which it is filled, and has

a wick-tube, *k*, which at its top, and where the wick protrudes and is burned, is expanded into a cup, *l*, which serves the double purpose of receiving the end of the perforated air-heating tube, so that no air can get to the blaze to support combustion except what passes through the perforations of the tube, and of preventing overflow of fluid from the wick down upon the sides of the wick-tube and the top of the reservoir. The perforated air heating and supplying tube *m* is of any length desired, that which is shown being in good proportion to the other parts, and is of such form in section as to surround the wick.

In the space inclosed by the tube *m*, and at its top, the gases generated from the fluid in the reservoir by its combustion at the wick end are mixed with heated atmospheric air, and consequently burn with a blue flame, nearly destitute of light-giving properties, but developing the maximum heating effect.

To protect the tube *m* from the effects of lateral currents of air, and to cause the maximum amount thereof to pass through the perforations to be mingled and burned with the gases in the tube *m*, I surround it with a shield, *n*, of peculiar construction, it being flared at its bottom, and then gradually contracting or tapering to the top of the tube *m*, to which it fits and is united, so that the shield *n* is hung or supported by the upper end of the tube *m*.

It will be seen that lateral air-currents are warded off by this shield from the tube *m*, which otherwise would cause the gases therein to be blown through the perforations, making their presence in the atmosphere known by their disagreeable odor. The air entering the expanded end of the shield becomes heated by contact with the tube *m* and shield *n*, and rising in consequence, is all of it forced through the perforations in *m* to urge and make perfect the combustion therein.

Secured to the wick-tube *k*, within the reservoir *b* and projecting through an aperture or slit in the top *o*, is a spring, *h*, which at its top is provided with bearings carrying a spindle having thereon friction-rolls *q*, opposite the pointed wheels, by the rotation of which the wick is raised and lowered. This spring always keeps the wick pressed by the rolls *q* upon the wheels *r*, and while yielding to any inequalities, renders the least rotation of the wick-spindle *g* effective.

The base-shield *s* surrounds the wick-tube and is soldered or otherwise made tight upon the top *o* of the reservoir. The top of this shield surrounds the cup formed on the wick-tube, nearly but not quite touching it, and enters the base of the top shield, *n*. The object of this base-shield is to encompass and convey all the vapors which may arise from the fluid in the reservoir, or which may proceed from overflow of the wick, into the space inclosed by shield *n*, and thence through the perforated tube *k*, in which they are consumed. The opening in *o*, through which the spring *g* passes, serves the other purpose of letting any fluid which may overflow from the wick pass back into the reservoir, and also allows any gases generated in the reservoir to escape, to be conducted by the shields *s* and *n* into the tube *m*.

To make the tube *m* and its shield *n* easily removable, so that the wick can be got at for trimming and lighting, two uprights, *t*, are secured to the top *o* of the reservoir, in which uprights notches are made, in which projections from the shield *n* catch and hold, the thin sides of the shield springing sufficiently for the purpose. The weight of the shield *n* and perforated tube *m* is borne by the wick-tube, in the cup of which the tube *m* fits and on which it rests.

I claim—

1. Providing the perforated air-heating tube with a shield having an extended base and a contracted top, the shield surrounding the tube, with their tops united and operating substantially as described.

2. The base-shield surrounding the wick-tube and the opening through the reservoir-top, when this shield enters and discharges into the space between the perforated air-heating tube and its shield, substantially as described.

3. The expansion of the wick-tube *k* at its top into a cup, *l*, of such size, form, and location as to receive and steady the perforated air-tube *m*, holding it properly in place with reference to the wick, and also receiving any fluid overflow therefrom.

4. The combination and arrangement of the spurred wick-tube wheels *r* on one side of the wick, with counteracting smooth-surfaced yielding presser-rolls *q* on the other side of the wick, substantially as described.

In witness whereof I have hereunto set my hand this 18th day of January, A. D. 1866.

OSCAR F. MORRILL.

Witnesses:

FRANCIS GOULD,  
J. B. CROSBY.