

Theodore Clough
Improvement in Lamps.

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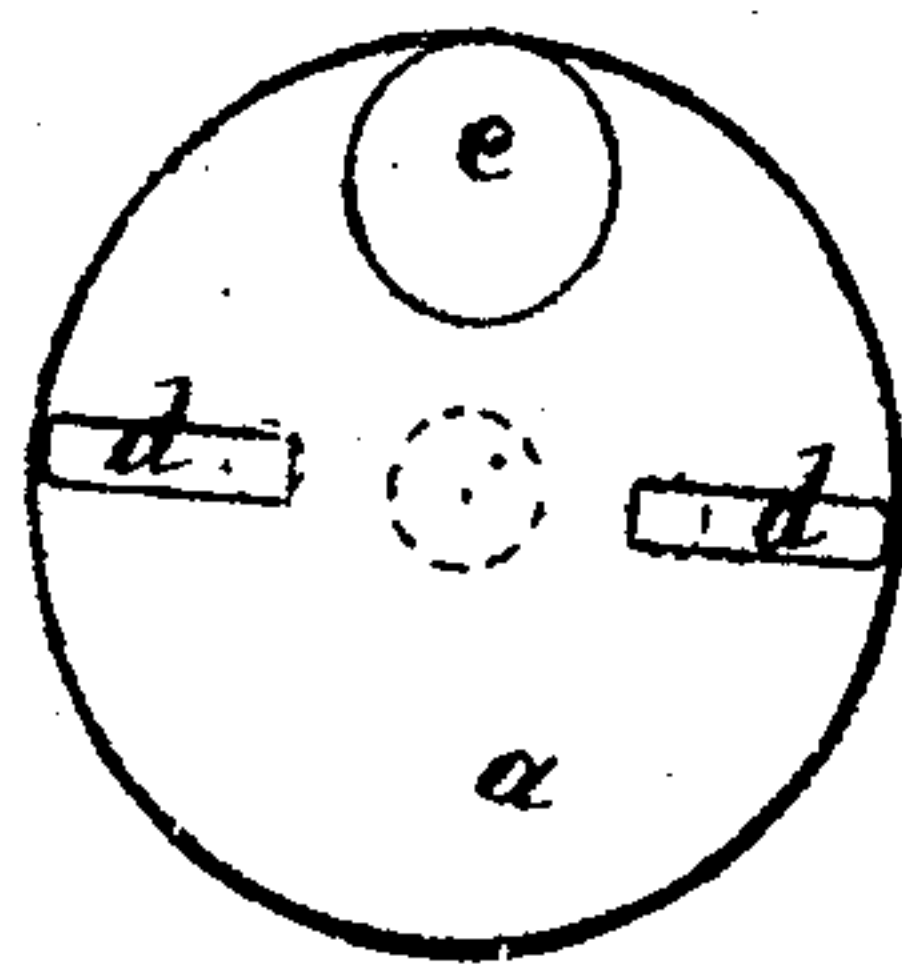


Fig. 1.

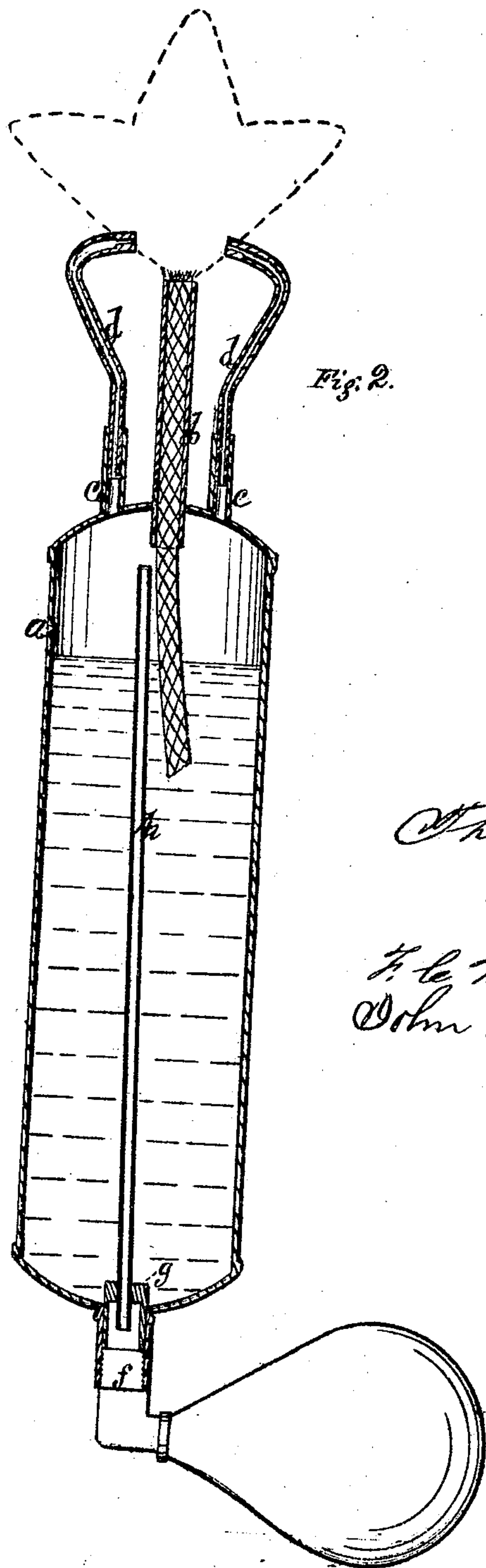


Fig. 2.

Theodore Clough

Witnesses.

H. C. Henderson
John A. Duncan

United States Patent Office.

THEODORE CLOUGH, OF DOBB'S FERRY, NEW YORK.

Letters Patent No. 71,280, dated November 26, 1867.

IMPROVEMENT IN LAMPS.

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, THEODORE CLOUGH, of Dobb's Ferry, county of Westchester, State of New York, have invented certain new and useful Improvements in Lamps; and I do hereby declare that the following is a full and correct description thereof, reference being had to the annexed drawings, and to the letters of reference thereon.

My said invention relates to lamps for burning very light hydrocarbon fluids commonly called gasoline, but may be applied to lamps for burning kerosene oil, and has for its object the production of a brilliant, smokeless flame from a wick-lamp without a chimney, and also to obviate, as far as may be, the danger of burning such light hydrocarbons, by keeping the top part of the lamp cool.

The first part of my invention consists in combining and arranging with the wick-tube two lateral air-jet pipes similar to blow-pipes, but placed so as to operate a little higher up on the flame from the wick than blow-pipes usually do. These air-jet pipes are also nearly opposite to each other, with the wick-tube between them, the arrangement being such, that, the air-jet tubes being supplied with air under pressure, two parallel or nearly parallel impinging currents of air strike the products of combustion laterally above the wick, from opposite sides, thus building up a very brilliant, flat flame, similar to a bat-wing or fish-tail burner. And the second part of my invention consists in a combination and arrangement of an air-supply pipe and the two air-jet pipes with the upper part of the reservoir, as hereinafter more particularly described, whereby all the upper part of the reservoir above its fluid contents becomes filled with air, which constantly being supplied by the supply-pipe, and passing off through the jet-pipes, keeps the upper part of the lamp cool, and carries out inflammable vapors as fast as they form, should any form in the reservoir by reason of the heat of the wick-tube. The pressure being always from within the lamp outward, gases and explosive vapors cannot be retained if generated within the reservoir, neither can they be sucked in from the flame through the wick-tube, in consequence of the consumption of the fluid contents of the reservoir, as is said to be the case in some spirit-lamps. But more particularly to describe my invention, I will refer to the drawings, which illustrate a simple mode of construction thereof adapted to street-lamps.

Figure 1, of the drawings, represents a top view, and

Figure 2 a vertical section of a street-lamp.

The reservoir *a* has a wick-tube, *b*, of suitable height for burning these light fluids; (if kerosene oil is to be used, the wick-tube should be shorter.) There are also two short tubes, *c c*, opening upward from the top of the reservoir, into which the air-jet tubes *d d* are inserted, forming a joint. The tubes *c c*, and the bent air-jet tubes inserted in them, might as well be made in one piece, except for convenience of adjusting the height and direction of the air-jet, which the joint, thus formed, permits. The usual filling-aperture is placed in the top, and closed with a stopper, *e*. At the bottom of the reservoir is a nozzle, *f*, with an internal screw-thread, whereby it may be screwed on to a pipe coming up through the lamp-post, like the gas-pipe in street gas-lamps, but which pipe is to be connected with a suitable reservoir of air under pressure, or any suitable means of supplying air under pressure. A tubular plug, *g*, is soldered in the nozzle *f*, to hold the air-supply pipe *h*, which passes up through the fluid and discharges into the upper part of the reservoir.

The gasoline to be burned being placed in the reservoir, below the top of the air-supply pipe *h*, and the lamp connected by its nozzle *f* to a suitable pipe connected with a suitable reservoir of air under pressure, the upper part of the lamp-reservoir becomes filled with air under pressure, which, being constantly changed, by reason of the air passing up through the jet-tubes, carries off the vapors which may form in the reservoir, and keeps the lamp-top comparatively cool.

Stop-cocks may be placed in the jet-tubes or in the nozzle at the base, if desired, for the purpose of shutting off the air or regulating its supply, but they are not necessary if the air-supply reservoir be kept, as it should be, at a constant pressure.

It is obvious that the first part of my invention does not depend on the second part, there being no difficulty in supplying air under pressure to the two jet-pipes, by well-known modes of connection, without carrying the air into the lamp-reservoir, and it is also obvious that the second part of my invention does not depend upon introducing the air through the bottom of the lamp-reservoir, as it may be carried in by a pipe going in at the side at the upper part of the lamp-reservoir.

I claim, as my invention and improvement in lamps suitable for burning light hydrocarbon oils—

The two lateral air-jet pipes, in combination with the wick-tube, arranged substantially as hereinbefore described and shown, and for the purposes hereinbefore set forth.

Also, the combination of the wick-tube, lamp-reservoir, two air-jet tubes, and the air-supply tube, when arranged substantially as hereinbefore set forth, so that the air-supply pipe discharges into the upper part of the lamp-reservoir, from whence the two air-jet pipes receive their supply, whereby the top of the lamp is kept cool, and vapors and gases removed from the lamp-reservoir and consumed.

THEODORE CLOUGH.

Witnesses:

F. C. TREADWELL, Jr.,
JOHN A. DUNCAN.