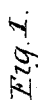
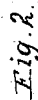


Vapor Burner.

No. 30,444.

Patented Oct. 16, 1860.



Witnesses:
 Lu. C. Alexander
 Arthur J. Groatman

Inventor:
W. D. Doherty

UNITED STATES PATENT OFFICE.

H. WILLIAM DOPP, OF BUFFALO, NEW YORK, ASSIGNOR TO J. B. WHITE, OF SAME PLACE.

LAMP.

Specification of Letters Patent No. 30,444, dated October 16, 1860.

To all whom it may concern:

Be it known that I, H. W. DOPP, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful
5 Improvements in Coal-Oil Lamps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked
10 thereon.

In order that those skilled in the art may make and use my invention I will proceed to describe its construction and operation.

In the annexed drawings, of which Figure
15 1 is a vertical section, and Fig. 2 a side elevation, A, represents the body of the lamp, in which the oil is placed. In the bottom of this body is an elastic diaphragm or a bellows, B, to which is attached a spring C,
20 said spring standing in a vertical position and being incased within a tube as shown in Fig. 1.

E, represents a pipe which is secured to the top of the body of the lamp, and which
25 has connected to it a tube D, which extends down into the lamp and conveys oil to pipe E. In the pipe E, is secured a stop cock F, which serves a double purpose—it admits oil to the burner, and at the same time its
30 periphery being provided with a cam groove it serves to raise and lower the rod *a*, one end of which presses upon the stop cock and is governed by the cam groove.

G, represents a pipe which connects with
35 the upper end of pipe E, by means of a screw. A rod *a*, passes through this pipe, and a wick *c*, surrounds the rod, as is represented in the Fig. 1. To the upper end of the rod *a*, is secured a valve *s*, and on top of
40 this valve is secured a needle point *x*. Upon the lower end of the rod is a cap *i* and surrounding the rod between the wick and the cap is seen a spring *d*.

n, represents a small nozzle with a minute
45 hole through it. This hole is just above the needle point and when the rod *a*, is raised the needle point passes into and through this small orifice for the purpose of cleansing it of all impurities, and keeping it free from
50 obstructions. H, represents a pipe which screws into the pipe G, and which is perforated as represented in the drawings.

The pipe H is provided with a cap R, and

is surrounded with three sleeves, M, N, P. It is also provided with an opening at *e*,
55 through which the atmospheric air passes in and mingles with the gas from the oil. The gas burns as it escapes from the orifices at *m*.

The object in perforating the pipe H, is
60 to prevent smoking and blowing. If a long burner pipe is used sufficient heat cannot be obtained, and if the pipe is shortened it will blow or smoke unless perforated.

In using this lamp the oil is placed in the
65 body A, through a proper opening, to receive it. The lamp is then tightly closed, and the bellows or elastic diaphragm forces the oil up the tube D, into the pipes E and G. The oil is converted in gas as it passes
70 through the nozzle at *n*, and rising mingles with atmospheric air which enters the opening *e*, and passing out is burned at the orifices *m*. A larger or smaller flame may be
75 produced by the use of the sleeves.

I wish not to be understood as claiming any particular form or shape of apparatus as this may be changed without affecting my invention.

I claim—

1. The employment of a bellows or elastic diaphragm operated by a spring or equivalent for the purpose of driving or forcing the fluid from the body of the lamp toward
80 or in the direction of the burner substantially as specified.

2. Operating the valve *s*, and needle point *x*, for graduating and cleaning purposes by means of a cam groove or its equivalent in the stop cock F, in combination with the
90 nozzle *n* whereby I avoid the necessity of packing, substantially as specified.

3. The rod *a*, or its equivalent when used as described by means of which I am enabled to place the cam stop cock, (or its
95 equivalent) beyond the reach of the surplus heat substantially as set forth.

4. The valve *s*, in combination with the rod *a*, spring *d*, and cam stop cock F, for the purpose of graduating the size of the
100 flame substantially as specified.

H. WILLIAM DOPP.

Witnesses:

C. M. ALEXANDER,
A. A. YEATMAN.