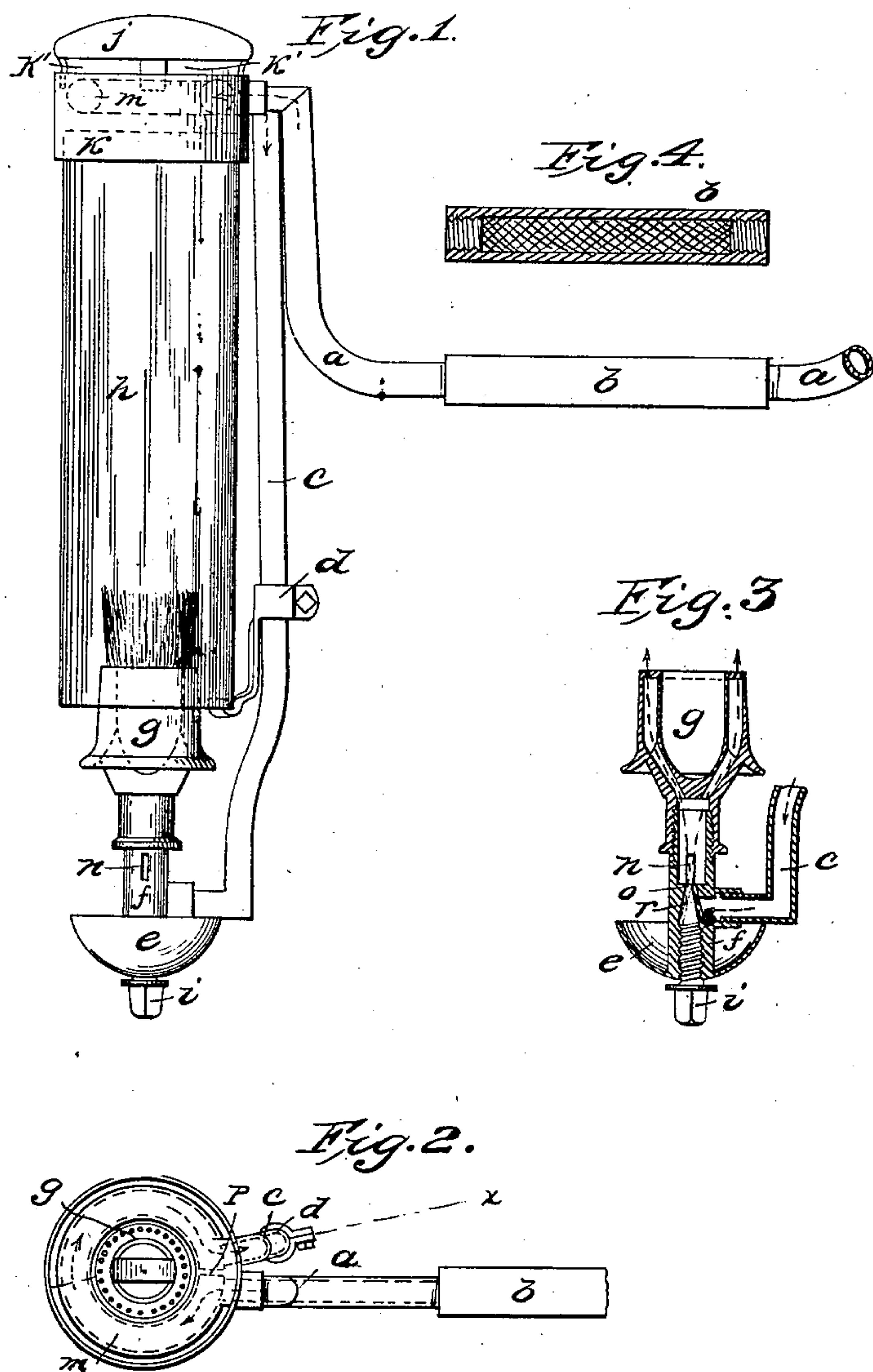


C. B. LOVELESS
VAPOR BURNER.

No. 79,485.

Patented June 30, 1868.



Witnesses:
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United States Patent Office.

C. B. LOVELESS, OF SYRACUSE, NEW YORK.

Letters Patent No. 79,485, dated June 30, 1868.

IMPROVEMENT IN VAPOR-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, C. B. LOVELESS, of Syracuse, in the county of Onondaga, and in the State of New York, have invented a certain new and useful "Improved Self-Generating Argand Gas-Light for Coast, Harbor, and other purposes;" and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 is a side elevation of my invention,

Figure 2 is a plan view of the same, with the cap *j* removed,

Figure 3 is a vertical section through the line *x x* in fig. 2, and

Figure 4 is a section of the packing.

The nature of my invention consists in the use of an argand gas-burner, in combination with a retort, deflector, and jacket at the top of the chimney of said burner, in which the fluid is converted into gas by the heat of the flame at said burner, as will be more fully hereinafter described, as a brilliant and continuous light for coast, harbor, and other lights.

To enable those skilled in the art to make and use my invention, I will now describe its construction and operation.

In the construction of my invention I use any of the known materials used for such purposes.

In fig. 1, *a* is the tube leading from the oil-reservoir, which is placed at a sufficient and convenient distance and height above the retort to allow the oil to flow into the retort from the oil-reservoir.

b is an enlarged portion of the tube *a*, containing packing (see fig. 4) for the purpose of regulating the flow of the fluid to the generator.

In fig. 2, *m* is the retort, seen only in dotted lines in fig. 1. This retort is made of a coiled tube, which is of a greater diameter than tube *a*, and has a partition, *p*, (seen in dotted lines in fig. 2,) for dividing the gas from the oil. Tube *a* is attached to this retort, and the oil is thus made to flow into the retort, in passing through which the oil is converted into gas, and passes from the retort down through the tube *c* to the burner.

d is the support for holding the chimney in position, securely attached to tube *c* by a clamp and screw.

Tube *a*, from packing *b* to the retort *m*, the said retort, the top or deflector *j*, jacket *k*, and tube *c*, are made of copper, as the best metal for the purpose of conducting heat quickly.

f is the air and gas-mixing tube, the gas flowing from tube *c* into it from one of its sides, and the air flowing into it through openings, *n*, which are on opposite sides of the tube *f*. The flow of gas into tube *f* is regulated, as it flows from tube *c* into tube *f*, by means of the screw *i*, whose cone-point opens or closes partially or entirely the recess, of cone-shape, in tube *f*, (shown at *r* in fig. 3,) as well as the opening *o*, through which the gas flows from this recess *r* into the burner. This opening *o* is on a level with the lower side of openings *n*, so that the air is drawn into tube *f* by the rush of the jet of gas through opening *o*, and passes with the gas in its passage to the burner, and is there consumed. The flow of air through openings *n* is regulated by screwing up or down the burner *g*.

g is a common argand burner. *k* is the jacket, which assists the top or deflector *j* in throwing the heat back on to retort *m*, and also holds in position the upper part of glass *h*. This top or deflector *j* has openings, *k'*, which serve as ventilators. The cup *e* is intended to hold the alcohol or other fluid which may be used in starting the flow of gas.

The operation of my invention is effected by removing the glass, *h*, filling cup *e* with alcohol, the heat from which, when fired, acting on the retort *m* directly, as well as deflected on it from top *j* and jacket *k*. The retort *m* having been sufficiently heated, the oil is turned on through packing *b* and tube *a* into the retort, where the oil is immediately vaporized, and passes off as a gas through tube *c*, (the screw *i* having been sufficiently withdrawn,) through tube *f* into burner *g*. The flame of gas, as soon as it burns steadily, is covered with glass, *h*, and the gas is generated from this time forth as long as the oil-reservoir has oil in it, and as fast as it is consumed by the burner.

I have now fully described the construction and operation of my invention.

The advantages of my invention consist in constructing a self-generating gas-burner, which generates the gas it consumes from the lighter grades of petroleum or other fluids, without wick, thus meeting the want experienced in securing a perfect and long-continuous light for coast, harbor, or other shore-lights. But it is especially adapted for lights on reefs and shoals, where it is at all times dangerous of approach, as it gives a more steady, intense, and brilliant light than any in use, and will burn for any length of time without any other attention than that of replenishing the oil.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The pipe *a*, retort *m*, cap *j*, jacket *k*, gas-pipe *c*, burner *g*, and chimney *h*, constructed and arranged substantially in the manner and for the purposes set forth.

In testimony that I claim the above-described certain new and useful "improved self-generating argand gas-light for coast, harbor, and other purposes," I have hereunto signed my name, this 12th day of June, 1868.

C. B. LOVELESS.

Witnesses:

T. G. CLAYTON,

Jo. C. CLAYTON.