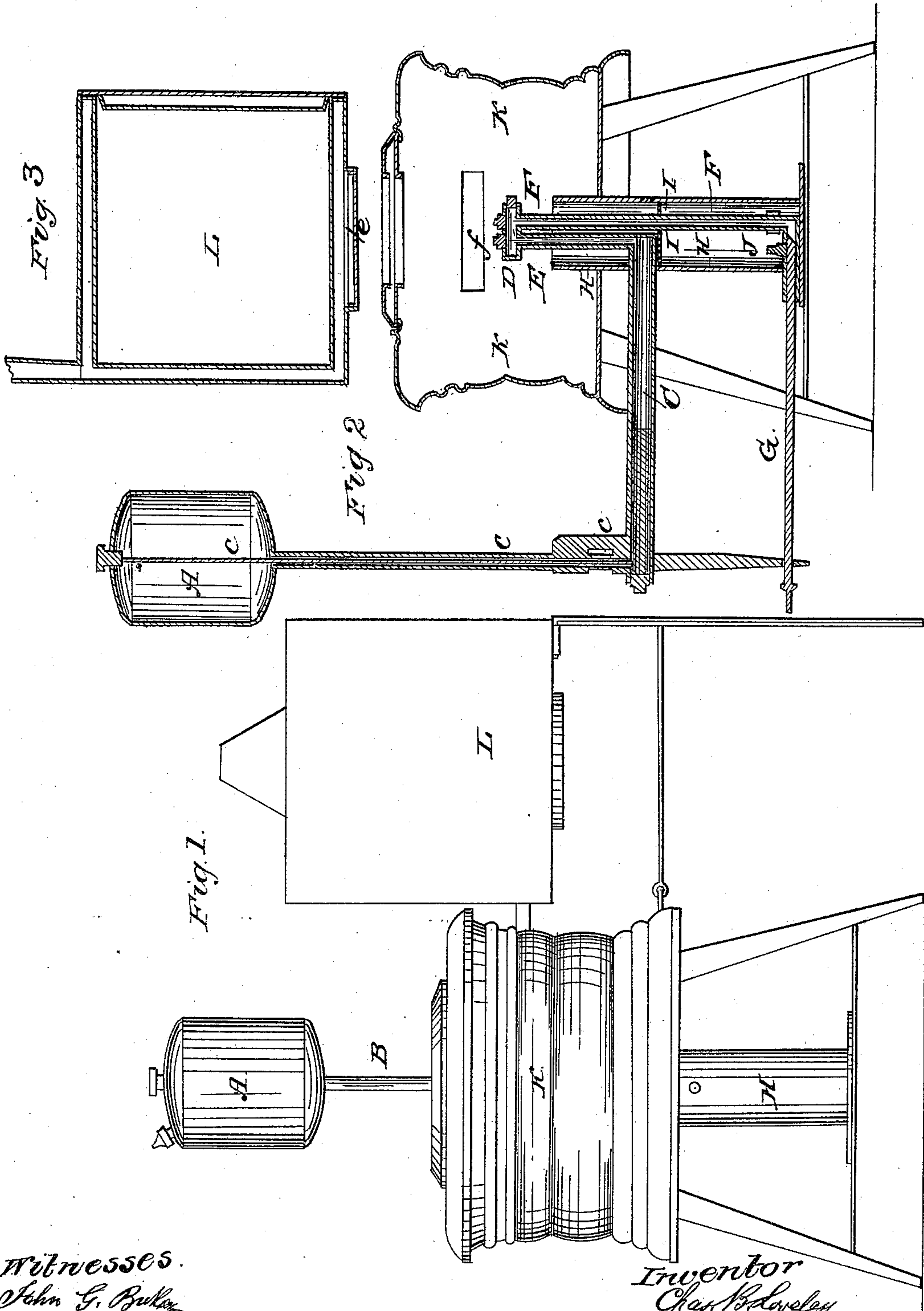


C. B. LOVELESS.

Vapor Stove.

No. 42,256.

Patented April 5, 1864.



Witnesses.
John G. Bulley
E. D. Clapp

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UNITED STATES PATENT OFFICE.

CHARLES B. LOVELESS, OF SYRACUSE, NEW YORK, ASSIGNOR TO OSCAR F. MORRILL.

IMPROVEMENT IN VAPOR-STOVES.

Specification forming part of Letters Patent No. 42,256, dated April 5, 1864.

To all whom it may concern:

Be it known that I, CHARLES B. LOVELESS, of Syracuse, Onondaga county, in the State of New York, have invented a new and useful Petroleum-Vapor Stove; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a front elevation. Fig. 2 is a vertical section through the retort, reservoir, &c. Fig. 3 is a section through the oven.

To enable others to make and use my invention, I will describe its construction and operation.

This invention is an improved apparatus for economically and conveniently using the vapor from petroleum or other oils so as to furnish sufficient heat for cooking or for warming an apartment.

The apparatus consists of a stove or cylindrical barrel, K, (of suitable size, and supported upon legs,) provided with a vertical chamber, H, open at top and bottom, and passing through the bottom of the stove. Across the center of this chamber is a perforated plate, I. The fluid to be converted into vapor is contained in an elevated reservoir suitably supported away from and above the stove. The fluid descends through the pipe B, and is regulated by the valve-rod *c*, passing through the reservoir and pipe B, thence through the packed pipe C, which passes through the side of the chamber H, into the pipes E and F, which are contained in the chamber, pipe F extending down to the burner J at the bottom of the chamber H, the burner being regulated by the valve-rod *g*. This is the substantial part of the invention.

More particularly, A is the elevated reservoir in which the petroleum is placed.

B is a strong supporting-tube, and connecting the reservoir and the vapor-tube.

C is the vapor-tube, which is provided with a small square-headed screw for the insertion or removal of a piece of cotton wick or other percolating filterer. (Shown by red lines in Fig. 2.)

c is a cone-pointed rod passing down through the reservoir and through the pipe B, where it works in a cone-seat, forming a valve for the regulation of the flow of the petroleum.

There is a crank or wheel upon the upper end of the rod, for turning it up or down, so as to operate it.

D is the retort, which I cast of copper, and then drill its chamber and pipes.

E is the tube connecting the vapor-tube and retort. It may be cast with the retort in one piece.

F is the vapor-conducting tube for conveying the vapor from the retort to the burner.

G is the valve rod for regulating the flow of vapor to the burner.

H is the air-mixing chamber, which incloses the burner J, plate I, and pipes E and F, and is directly under the retort D, and serves to furnish a current of air to the burner, and to direct the vapor from the burner up through the plate, and also to direct the heat to the center of the stove. In this chamber the upward current of atmospheric air is mixed with the vapor escaping from the burner, and passes up through the perforated plate, where the combined air and vapor burn in numerous little jets.

I is the perforated flame-plate, immediately below the vapor-pipe and under the retort, and having pipe F passing through it.

J is the burner, or, perhaps more properly, the vapor-outlet.

K is the stove or screen surrounding the retort, &c.

L is the oven, which has a continuous flue around four sides and the back. This oven may be used either in connection with the side of the stove K, as shown in Fig. 1, or the bottom stopper, *e*, may be removed, and the oven be placed upon the stove, the opening in the side of the stove being closed by the stopper *f*.

I can boil on the stove and bake in the oven at the same time. The oven is provided with a leg and brace for its firm support when attached to the side of the stove.

In the operation of my invention, the reservoir A being filled with oil, I open the valve by turning the valve-rod *c*, so as to permit the oil to pass from the reservoir down through pipe B, and to percolate through the filterer in the vapor-pipe C into the said pipe. Heat is now applied by a gauze "lighter" to the retort and around pipes C and E. This heat converts the fluid in pipe C into vapor, which

ascends into the retort, where it is more thoroughly vaporized; thence it is conducted to the burner J by the pipe F, the quantity escaping being regulated by the cone-seated valve-rod G. When the vapor is thus produced by the heat from the lighter, it passes out of the lips of the burner and ascends the air-mixing chamber until it strikes the perforated plate, through which it passes, and ignites by the lighter, burning directly under the retort and around its pipes in a large number of very small jets of flame. The heat thus produced is much greater and steadier than could have been obtained from one single jet directly burned at the burner-nipple. By combining the atmospheric air with the vapor from the petroleum a saving in the quantity of petroleum is effected, and more heat is obtained in consequence of the draft of warm air. The heat thus produced first

strikes against the bottom of the culinary vessel upon the top of the stove. It then passes to the right under the oven, up the side, over the top, down the side next to the stove, and around the back out of the flue-pipe M.

What I claim as new, and desire to secure by Letters Patent, is—

1. The stove K and chamber H, constructed, arranged, and operating substantially as above described, in combination with the independently-acting valve-rod c and gas-cock G.

2. The valve-rod c, passing through the reservoir and conduit into the vaporizing or retort pipe, constructed, arranged, and operating as set forth.

C. B. LOVELESS.

Witnesses:

J. W. PHILLIPS,
H. N. ROOT.