(No Model.)

W. H. PECK.

PETROLEUM VAPOR BURNER.

No. 308,573. Patented Nov. 25, 1884.

Fig. 1.

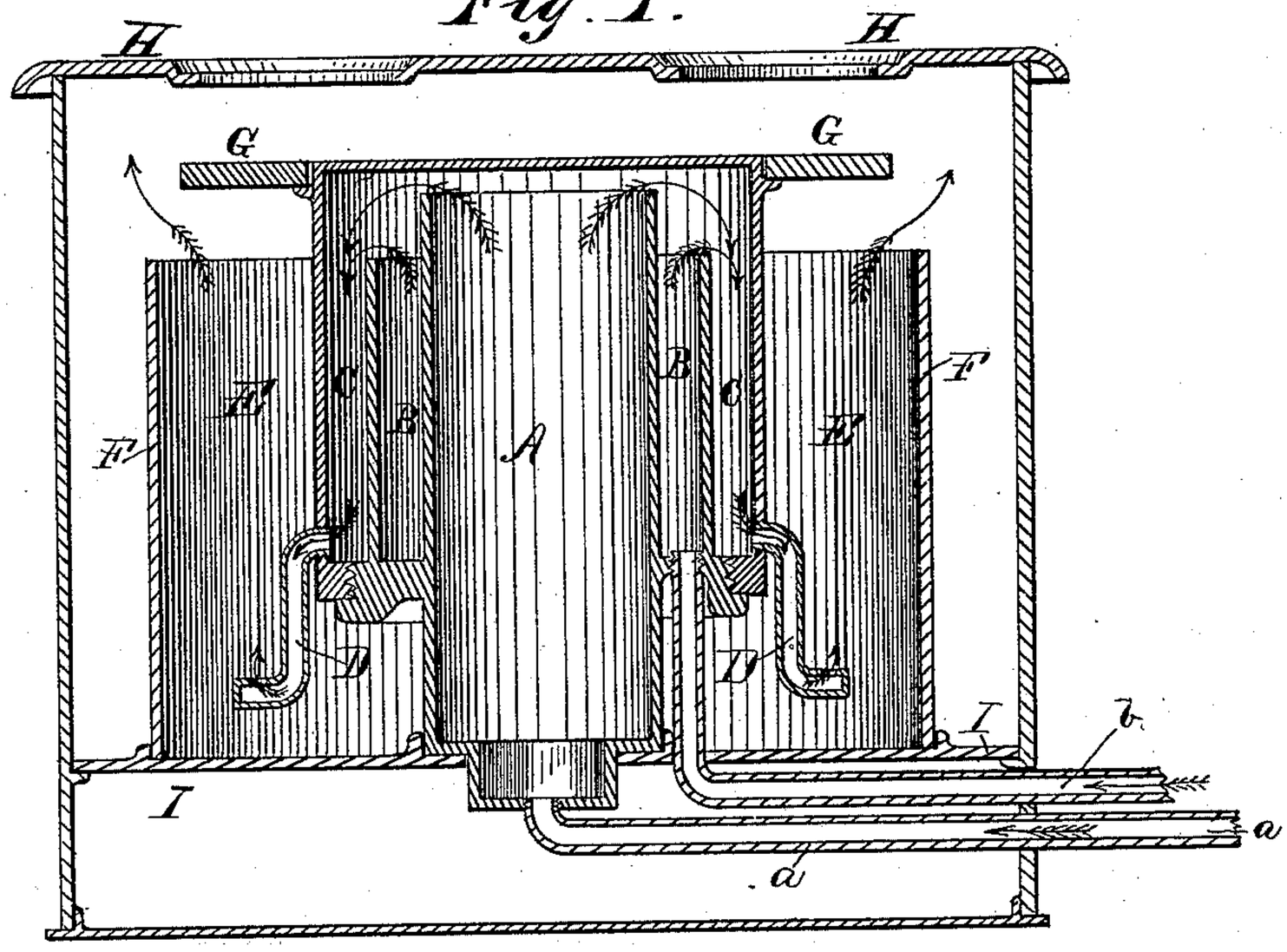
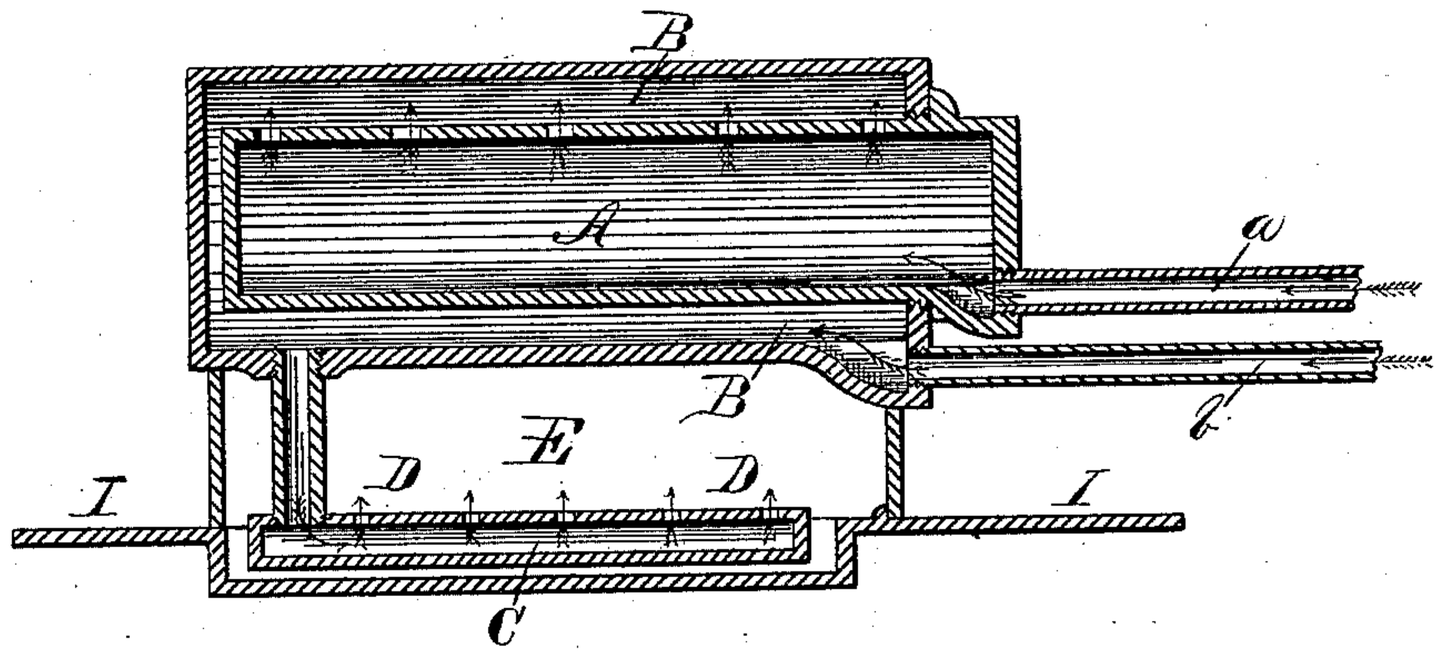


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILBUR H. PECK, OF CHICAGO, ILLINOIS.

PETROLEUM-VAPOR BURNER.

SPECIFICATION forming part of Letters Patent No. 308,573, dated November 25, 1884.

Application filed December 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILBUR H. PECK, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Petroleum-Vapor Burners, of which the following is a specification, reference being had to the drawings.

This invention is intended to be an improvement on that described and claimed in Letters Patent No. 286,328, of October 9, 1883, to Orrin B. Peck and others; and the invention consists in the novel arrangement of parts hereinafter more particularly described and claimed.

In the drawings, Figure 1 represents a transverse vertical section of my improved vapor-burner, and Fig. 2 a transverse vertical section of the same somewhat modified.

A represents a chamber or tube, into which water is introduced from a tank or water-supply by means of the supply-pipe *a;* B, an annular chamber or space extending wholly or partially around chamber A, into which petroleum or other combustible fluid is introduced by means of the supply-pipe *b*, leading from a tank or other source of supply; C, another annular chamber or space around and inclosing wholly or partially the chamber B, and into which the gases generated, as hereinafter described, in the chambers A and B have means of access, as represented by the arrows; D, pipes, conduits, or orifices through which the commingled gases generated in chambers A and B are led into a combustion space or chamber, E, inclosed by the casing F; G, a plate or ring extending partially over combustion-chamber E to spread the flame; H, the top of the stove, where one is used, into which the retort or burner is placed; I, a plate on which the burner rests.

In constructing my improved burner as shown in Fig. 1, I make three chambers, the one within the other, and means of communication between them. As represented in the drawings, these three chambers all open at the top into one common space covered by the top of the outer chamber, so that the gases arising from the two inner chambers commingle, and together enter the outer space or chamber. I surround the three chambers by a space or annular chamber, (though this may be dispensed with and the gases allowed to burn freely on the outside of chamber C,) in which the united gases are ignited and consumed.

In order to spread the flame arising from the combustion of the gases, I place a plate or ring above and partially covering the combustion-chamber. This plate rests upon shoulders or flanges preferably cast upon the outer of the three chambers near its top, as shown in the drawings. The flames, rising to the top of the combustion-chamber, strike against this ring and are deflected out and around its edge, as indicated by the arrows. Pipes lead into chambers A and B from tanks or sources of supply, by which water and petroleum or other combustible gaseous fluids are introduced into these chambers respectively. The supply of water or oil may be regulated by cocks, valves, or other well-known means.

In Fig. 2 the construction of my burner or retort is somewhat modified. The gases produced in chambers A and B are led by a pipe into a space or chamber, C, whence they pass through the orifices D into the combustion-chamber E, whence the flames rise around the sides of the chambers A and B. In this drawing the chambers are represented in a horizontal instead of in a vertical position.

In operation the oil is admitted into the chamber B and allowed to pass on into chamber C and out through the pipes or orifices D, when it is ignited by a match or other convenient means. The burning-oil heats the chambers A and B, so that the water and oil in them are vaporized, after which their commingled gases, instead of the oil, support the combustion.

I am aware that it has been proposed to introduce steam into the oil-vapor through a tube passing through an oil-chamber, the steam being generated at a distant point. In my invention the flame from the burner itself generates the steam from the central water-chamber.

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

1. The combination, in a vapor-burner, of a water-chamber, a surrounding oil-chamber,

and burners arranged around both said chambers to heat the same, substantially as described.

2. A retort or vapor-burner consisting of a water-vaporizing chamber, an oil-vaporizing chamber surrounding the water-chamber, and a mixing and burning chamber surrounding both the oil and water chambers, substantially as described.

3. A retort or vapor-burner consisting of three chambers—*i. e.*, a water-chamber, an oil-chamber, and a surrounding mixing and burning chamber—substantially as described.

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