

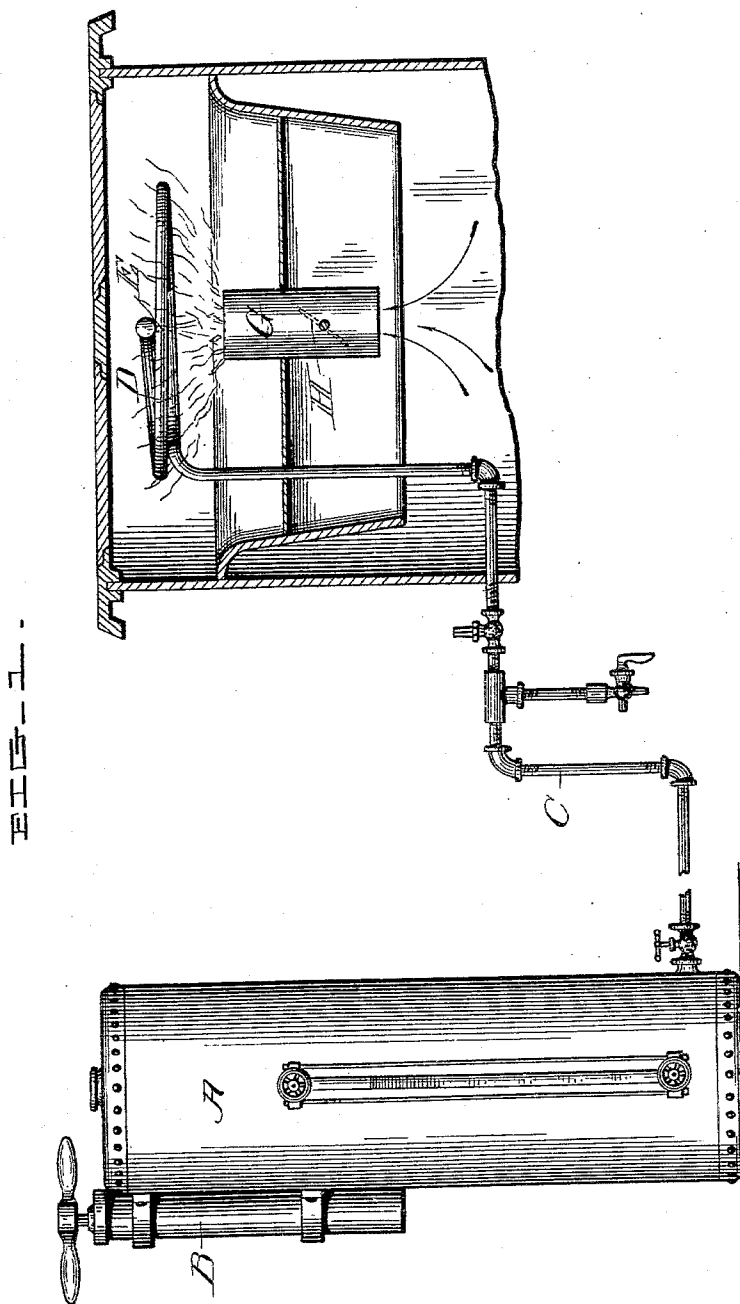
(No Model.)

2 Sheets—Sheet 1.

R. H. LAIRD.
OIL BURNER.

No. 545,236.

Patented Aug. 27, 1895.



Witnesses
J. R. Cornwall
Hugh K. Wagner.

Inventor
Robt. H. Laird.
By Attorney
Paul Bakewell

(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

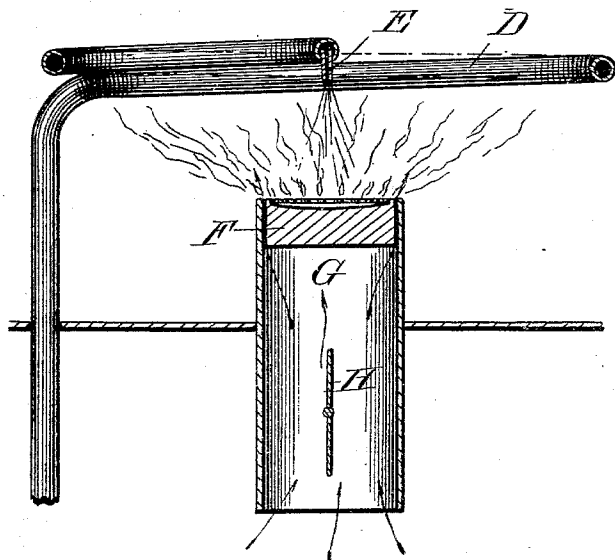


FIG. 4.

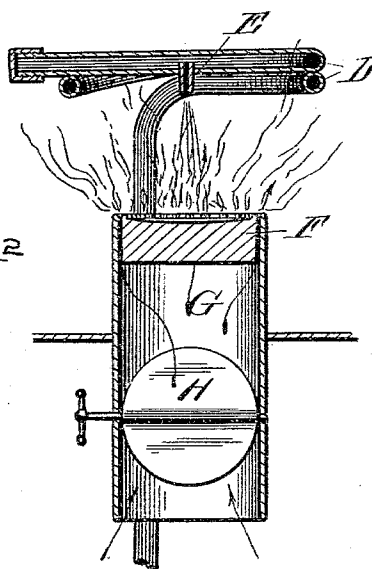
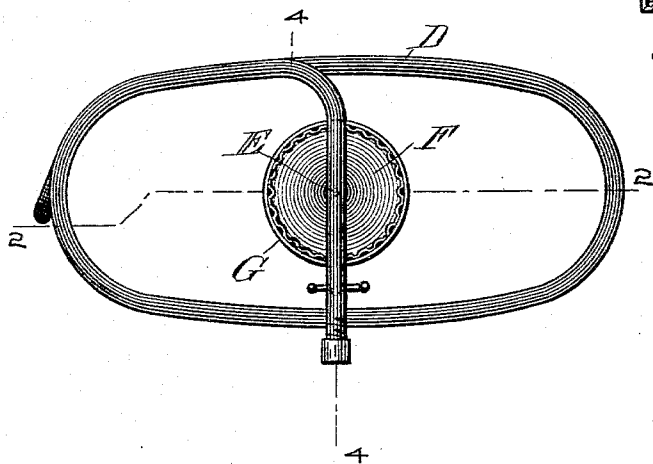


FIG. 3.



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UNITED STATES PATENT OFFICE.

ROBERT H. LAIRD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WILLIAM HENRY LAIRD, OF NEW YORK, N. Y.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 545,236, dated August 27, 1895.

Application filed August 18, 1894. Serial No. 520,663. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. LAIRD, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Oil-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, wherein—
Figure 1 is a side elevation of an oil-reservoir and my improved burner, showing the application of the burner to a cooking-stove. Fig. 2 is a longitudinal sectional view on line 2 2, Fig. 3. Fig. 3 is a top plan view; and Fig. 4 is a cross-sectional view on the line 4 4, Fig. 3.

This invention relates to a new and useful improvement in an oil-burner, the object being to construct a device of the kind described whereby the oil to be burned is first vaporized and finally thoroughly consumed.

The special features of this invention consist in the combination with a coil for the vaporization of the oil, which coil may be said to terminate in a downwardly-projecting nipple, which nipple directs the vapor against a deflecting-plate, whence it is spread, and taking up the induced oxygen or air at the edges of the plate is thoroughly consumed. The advantage of such construction is that the oil, after being vaporized and directed against the deflector-plate, spreads out and induces an inflow of oxygen from the edges of the deflector-plate, at which point the two are intimately mixed, when thorough combustion takes place at the point of mixture. The stream of oil emitted from the nipple is thus within walls of flame, and the heat being so intense at its point of contact with the deflector-plate no particles of carbon are freed. Therefore thorough combustion is the result.

In the drawings, A indicates a reservoir for the oil, and B a force-pump preferably attached thereto, the function of which latter is to subject the oil in the reservoir to a pressure, such parts being of any well-known or desired construction. From said reservoir leads a supply-pipe C, which is provided with suitable cocks and drip-cocks, said supply-pipe leading to a coil D, which, as shown in Fig. 1, is located within the cooking-stove, just be-

neath the plates thereof. This coil D has leading from its end a nipple E, which, as shown in the drawings, projects downwardly; but it is obvious that it may project laterally, if desired, depending upon the location of the deflector-plate hereinafter referred to.

Arranged within the stove or other suitable support is a deflector-plate F, which is preferably concaved in its face or in the shape of a saucer, said deflector-plate being in line with the nipple E and beneath the same, whereby when the device is in operation any fluid particles of gas not vaporized by the coils D, as might be the case when first starting the fire, would be precipitated upon the deflector-plate and held in the cavity thereof until consumed by the flame or until such time as the deflector-plate would be heated to such an extent as to convert the same into gas, when it would be forced out by the ejected gas from nipple E and thrown into the path of the induced oxygen, where it would be consumed.

The deflector-plate F is preferably mounted in a suitable frame G, open at its bottom or side, so as to permit the air to flow thereinto to be drawn up around the deflector by the draft created by the flames above the deflector. These draft-induction openings around the deflector are preferably made by forming grooves or serrations in the edge of said deflector or in any other suitable manner which would permit the air to pass around the same, in order to enable the oxygen to commingle with the carbon at the edges of the deflector. The frame G, in which the deflector is mounted, is preferably provided with a damper-plate H, for the purpose of regulating the admission of air to the flame.

The nipple E is preferably arranged in a cross-pipe forming the end of the coil B, said nipple projecting inwardly beyond the bottom of the pipe, so that any sediment or other foreign matter in the coil would not choke the opening of the nipple, thereby permitting the gases freedom to pass therethrough unobstructed.

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

1. In an oil burner, the combination with

an outer casing, of a vaporizing coil located in the upper part of the casing and having its end portion extending across the space within the coil, a depending nipple on the cross-over portion between the coils, a hollow frame supported in the casing below the nipple, and a drip deflector plate secured in the upper end of the frame and having marginal recesses constituting air passages, substantially as described.

2. In an oil burner, the combination with a casing, of a vaporizing coil located in the upper part of the casing having its end portion extending across the space within the coil, a depending nipple on the cross-over portion between the coils, a hollow frame supported in the casing below the nipple, a drip deflector plate secured in the upper end of the frame and having marginal recesses constituting air passages, and a damper in the holder below the plate, substantially as described.

3. In an oil burner, the combination with

a casing, of a vaporizing coil therein having a central depending nipple thereon, a vertical hollow frame of a diameter less than that of the coil, a deflector fixed in the upper end of the frame, and having air passages at its edge leading from the interior of the frame, substantially as described.

4. In an oil burner, the combination with a vaporizing coil provided with a suitable ejection opening, of a hollow casing arranged in line with said opening, and a drip deflector plate secured in the end of said casing nearest the opening, and having marginal recesses constituting air passages between its edges and the side walls of the casing, substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 9th day of August, 1894.

ROBERT H. LAIRD.

Witnesses:

F. R. CORNWALL,

HUGH K. WAGNER.