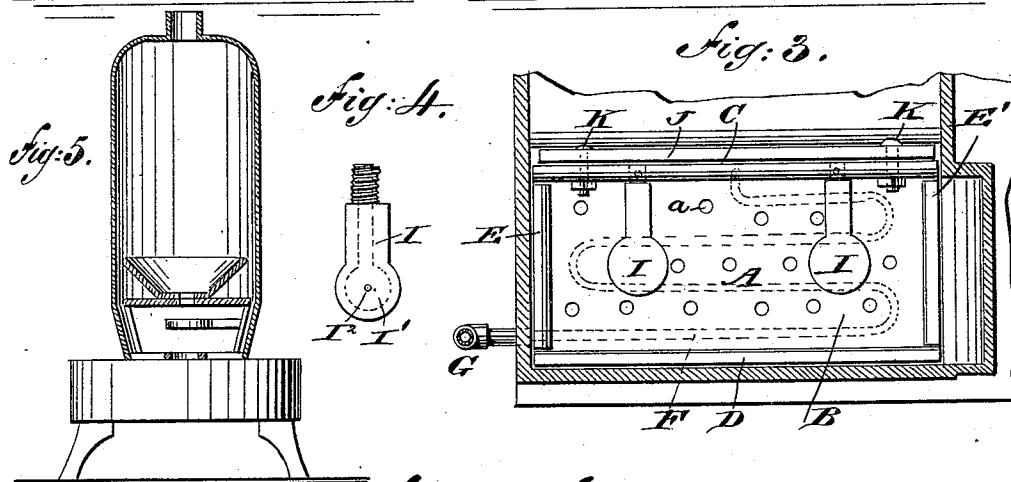
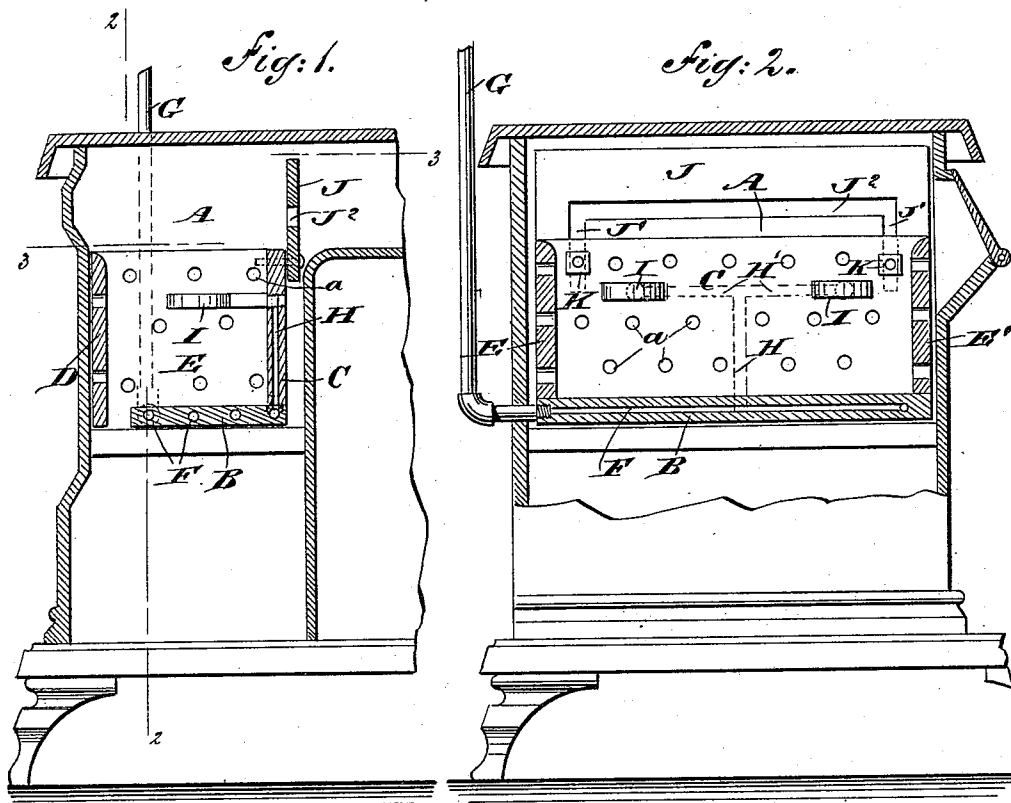


(No Model.)

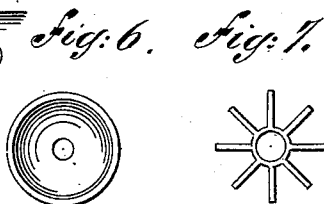
T. A. WILLIAMSON.
BURNER.

No. 470,091.

Patented Mar. 1, 1892.



WITNESSES:
Chas. Kida.
C. Sedgwick



INVENTOR:
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UNITED STATES PATENT OFFICE.

THEODORE A. WILLIAMSON, OF ALLEGHENY, PENNSYLVANIA.

BURNER.

SPECIFICATION forming part of Letters Patent No. 470,091, dated March 1, 1892.

Application filed November 21, 1891. Serial No. 412,641. (No model.)

To all whom it may concern:

Be it known that I, THEODORE A. WILLIAMSON, of Allegheny city, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Burner, of which the following is a full, clear, and exact description.

The invention relates to hydrocarbon-burners for cooking or heating purposes.

10 The object of the invention is to provide a new and improved burner which is simple and durable in construction, very effective in operation, and arranged for convenient insertion and use in ordinary stoves.

15 The invention consists of a box containing a bottom plate formed with a coil connected at one end with an oil-supply, a back plate having a channel connected with the other end of the coil, and one or more burners secured on the back plate and connected with the channel to receive the gas and oil supply.

20 The invention also consists of certain parts and details and combinations of the same, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

30 Figure 1 is a sectional side elevation of the improvement as applied to an ordinary cooking-stove. Fig. 2 is a sectional transverse view of the same on the line 2 2 in Fig. 1. Fig. 3 is a sectional plan view of the same on the line 3 3 in Fig. 1. Fig. 4 is an enlarged plan view of one of the burners. Fig. 5 is a sectional side elevation of the burner as applied to a heating-stove. Fig. 6 is a plan view of a draft-plate for the same, and Fig. 7 is a plan view of a modified form of burner.

40 The improved burner is provided with a box A, containing the bottom plate B, a back plate C, a front plate D, and two end plates E and E'. The box A is adapted to be placed into the fire-box of the stove, as plainly illustrated in the drawings, sufficient room being left between the back, front, and sides or ends for free circulation of air to facilitate combustion. In the bottom plate B is formed 50 a coil F, connected at one end with a supply-pipe G, extending upwardly and connecting

with a reservoir containing the oil. The reservoir is located a sufficient distance above the box A, so that the oil flows readily through the pipe G into the coil F and from the latter to the burners, as hereinafter more fully described. 55

The coil F, instead of being cast into the bottom plate B, may be formed thereon by piping or other means. The inner end of the coil of pipe F terminates at the back plate C and connects with a channel H, arranged in the said back plate and extending upwardly to branch into the branch channels H', each connected at its end with a burner I, preferably made in the shape illustrated in Figs. 3 and 4, being formed with a screw-thread screwing into the back plate, so as to extend at right angles therefrom into the box A a suitable distance above the bottom plate B. 65 70

The burner I is made in the shape of a hollow casting, connecting at its rear end with a channel and formed at its front with an enlarged recess I', connecting at the bottom with an aperture I², arranged centrally, as plainly illustrated in Fig. 4, so that the oil or gas can readily escape from the burner in a desired direction. The front plate D and also the end plates E and E' are provided with perforations *a*, so that air can pass through the perforations to the interior of the box A to aid combustion. 75 80

It will be seen that when the burner is in operation the oil entering through the inlet-pipe G and passing along the coil F is subjected to heat from the burner I, so that the oil is generated into gas, which rises in the channels H and passes to the burner I to be burned therein, the flame extending downwardly into the box to heat the bottom B to generate gas, as above described. The heat generated by the burner can pass readily from the top of the box to the channels of the stove in the usual manner. 85 90

In order to regulate the amount of heat passing rearwardly from the box to the stove proper, a transverse plate J is provided, having vertical slots J' engaged by bolts K, held on the back plate C, and serving to adjust the plate J vertically to increase or diminish the space between the upper edge of the plate and the top plate of the stove. The transverse 95 100

plate J is also provided with a transversely-extending slot J² for the passage of heat and gas to the rear of the stove.

As illustrated in Figs. 5, 6, and 7, the device is applied to an ordinary stove.

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

1. A burner comprising a box provided with a bottom plate formed with a coil connected at one end with an oil-supply and a back plate having a channel connected with the end of the coil and a burner or burners secured on the said back plate and connected with the channel to receive a gas-supply, substantially as described.

2. An improved burner comprising a bottom plate formed with a coil, an oil-supply pipe connected with one end of the said coil, a back plate resting on the said bottom plate and formed with a channel connecting with the other end of the said coil, and a burner secured on the said back plate and connected with the said channel, the burner being provided with an aperture in its bottom, substantially as shown and described.

3. An improved burner comprising a bot-

tom plate formed with a coil, an oil-supply pipe connected with one end of the said coil, a back plate resting on the said bottom plate and formed with a channel connecting with the other end of the said coil, a burner secured on the said back plate and connected with the said channel, the burner being provided with an aperture in its bottom, and perforated front and end plates, substantially as shown and described.

4. An improved burner comprising a bottom plate formed with a coil, an oil-supply pipe connected with one end of the said coil, a back plate resting on the said bottom plate and formed with a channel connecting with the other end of the said coil, a burner secured on the said back plate and connected with the said channel, the burner being provided with an aperture in its bottom, and an extension draft-plate held vertically adjustable on the said back plate, substantially as shown and described.

THEODORE A. WILLIAMSON.

Witnesses:

GEORGE R. BOTHWELL,
THOMAS HARVEY.