(No Model.)

H. N. DAVIS.

HYDROCARBON BURNER.

No. 442,959. Patented Dec. 16, 1890.

Fig. 1.

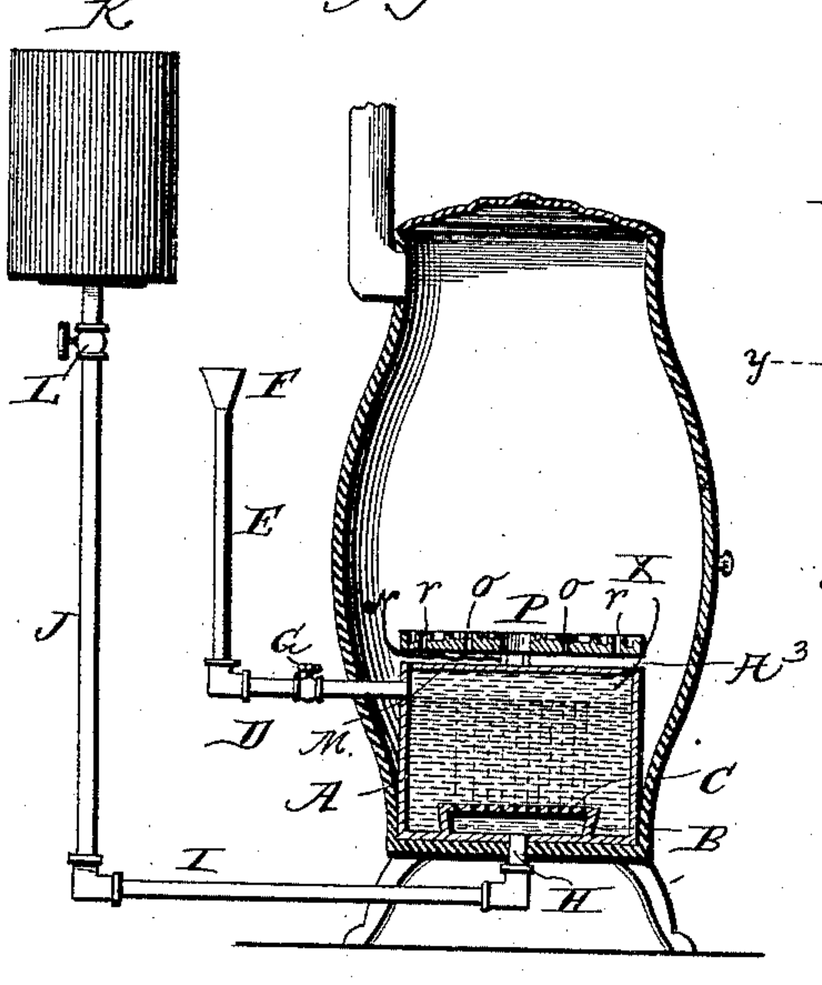


Fig. 2.

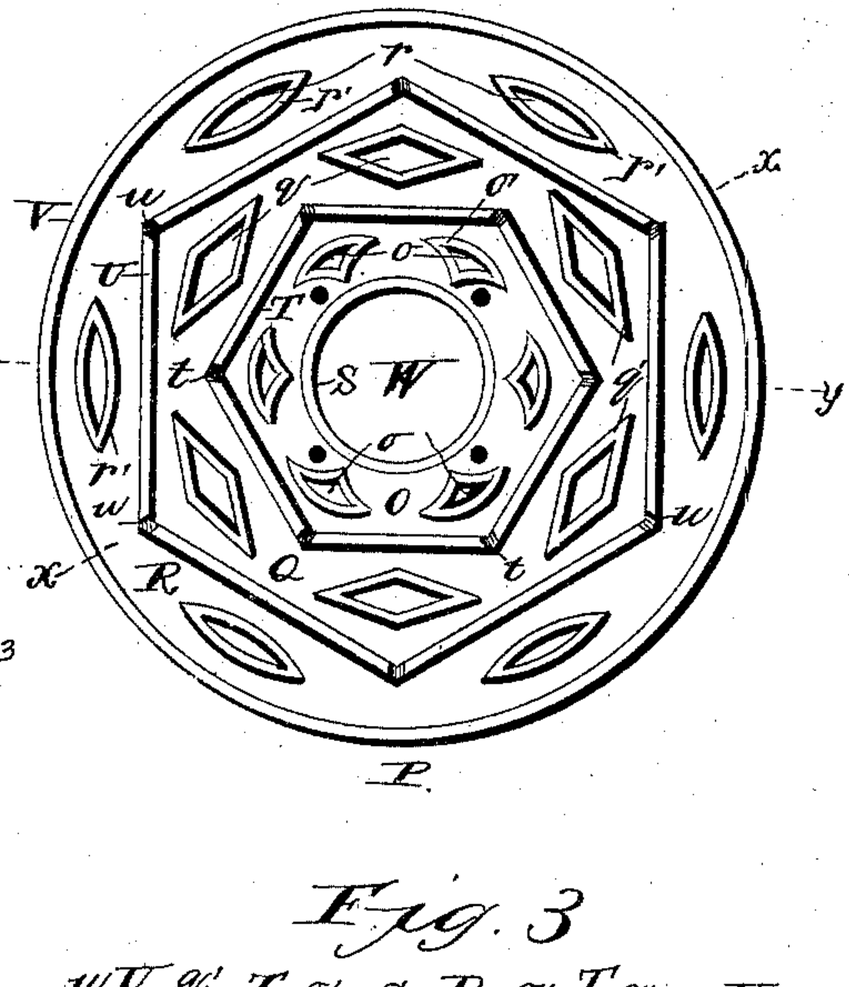


Fig. 3

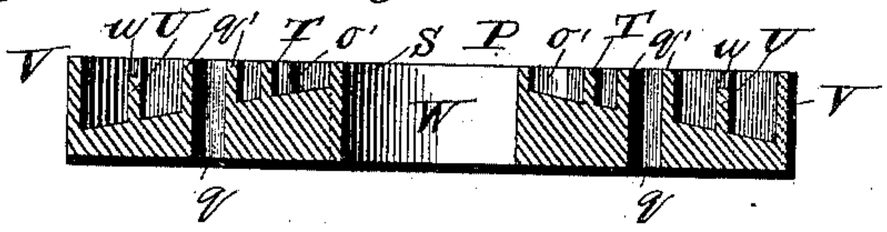


Fig. 7.

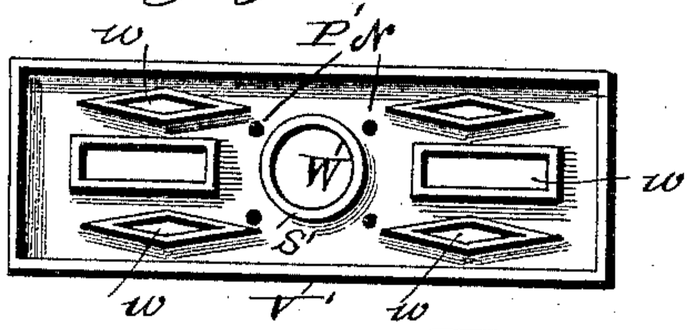


Fig. 6.

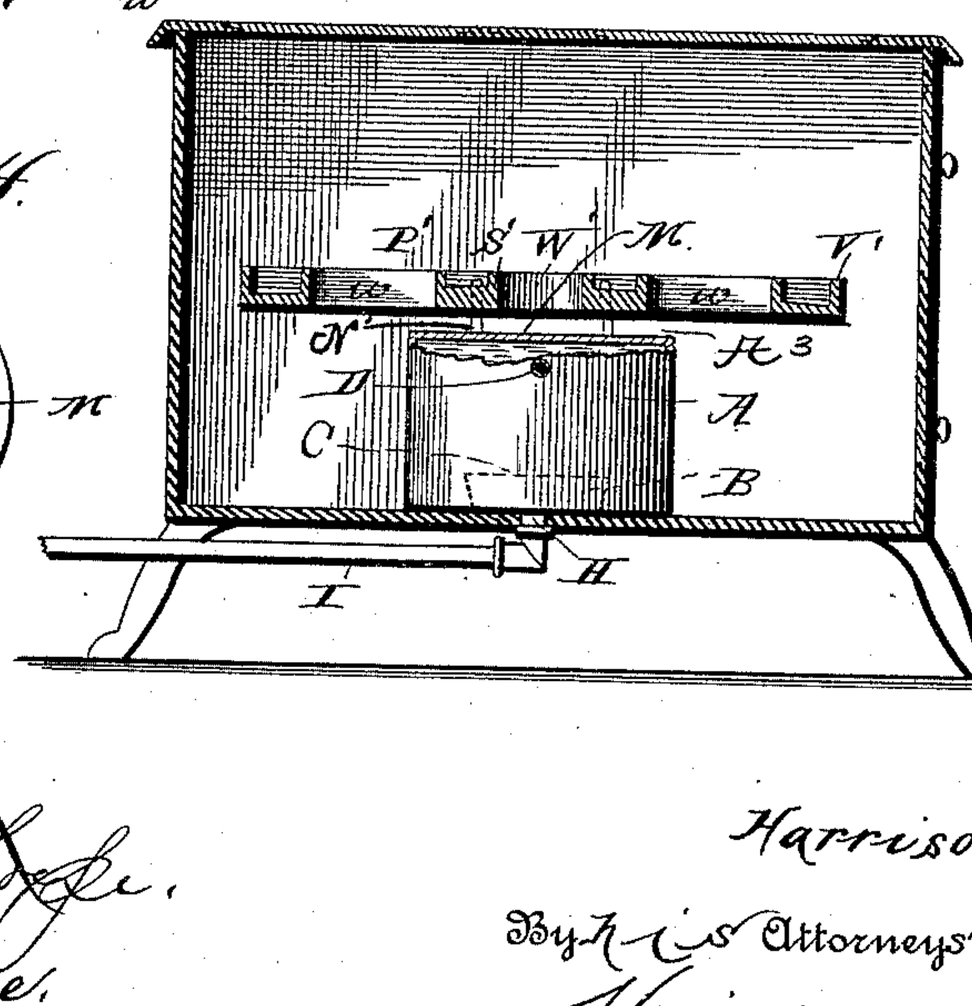


Fig. 4.

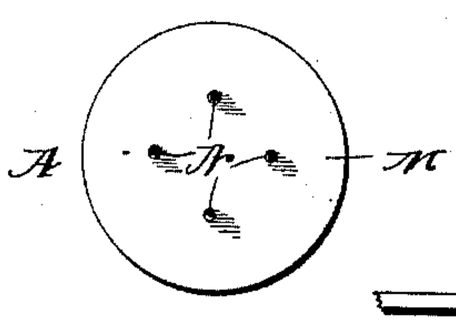
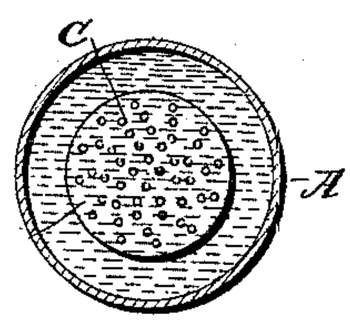


Fig. 5.



Witnesses

C. G. Paddock.

H. E. Price.

Inventor

Harrison N. Davis,

By his Attorneys

Higdon & Higdon.

UNITED STATES PATENT OFFICE.

HARRISON N. DAVIS, OF ARMOURDALE, KANSAS.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 442,959, dated December 16, 1890.

Application filed October 14, 1890. Serial No. 368,064. (No model.)

To all whom it may concern:

Be it known that I, HARRISON N. DAVIS, of Armourdale, Jackson county, Kansas, have invented certain new and useful Improvements in Hydrocarbon-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improvement in hydrocarbon-burners; and it consists in the novel combination and arrangement of devices, as will be fully specified hereinafter, and particularly pointed out in the claim.

Referring to the drawings, which illustrate this invention, Figure 1 represents an elevation, partly in section, of my invention as applied to a heating-stove. Fig. 2 is a top plan view of the burner. Fig. 3 is a sectional view on the line *x x* of Fig. 2. Fig. 4 is a plan view of the water-receptacle through which the oil is sprayed and then escapes through the pipes, arranged preferably as shown. Fig. 5 is a horizontal sectional view of said water-receptacle. Fig. 6 is a view showing my invention as applied to an ordinary cook-stove or range. Fig. 7 is a top plan view of the burner shown in Fig. 6.

Similar letters refer to similar parts in all the figures, in which—

A represents a water-receptacle, which rests, preferably, on the bottom wall of the stove and is provided with the interior and separate chamber B, the upper plate C of which is perforated, as shown. Communicating with the water-receptacle, a suitable distance below its upper wall, is a feed-pipe D, which is connected by an elbow with a vertical pipe E, having a funnel F on its upper end. The horizontal pipe D is provided with a valve G, located in a convenient position to be operated. Communicating with the interior of the inner receptacle B through the bottom of the stove is a pipe H, which is connected by pipes I and J with an oil-reservoir K. The pipe J is provided with a valve L.

Extending upward from the cap or upper closed end M of the receptacle A are short pipes N, which communicate with the oil-chamber O in the burner P, and, as an additional function, these pipes support the burner at a sufficient distance above the tank A to leave an air-space A^3 below said burner, by means of which air may be fed to the air-spaces *o q r* thereof, as hereinafter described. This burner is provided also with the compartments or oil-chambers Q and R, the several chambers being formed by the partitions S, T, U, and V. The bottom of the chambers O, Q, and R incline downwardly and outwardly to the exterior wall V. Each oil-chamber is also provided with air-openings *o*, *q*, and *r*. The inner circular wall S forms the enlarged air-openings W. These air-openings *o*, *q*, *r*, and *w* extend entirely through the burner and communicate with the air-space A^3. The illustration of the burner in Fig. 1 is a section on line *y y* of Fig. 2, thus showing the air chambers or openings *o* and *r*, besides the central openings, while the illustration in Fig. 3 is a section on line *x x* of Fig. 2, thus showing the central air-opening and the opening *q* only. The walls T and U are provided with notches *t* and *u* in their upper edges, the purpose of which will be presently described.

In Fig. 6 I show my invention provided with the rectangular burner P′, constructed, preferably, with the circular wall S′ inclosing the central air-openings W′, the base or bottom of said burner inclining downward toward the outer flange or wall V′, from the openings through which the pipes N communicate with said burner from receptacle A. This burner is also provided with air-openings *w*, as shown.

The operation of my invention is as follows: A sufficient quantity of water is admitted to the receptacle A through the funnel F and pipes E and D, when the valve G is operated. The valve L is then operated, allowing the oil from the reservoir K to pass through pipes J, I, and H and enter the interior receptacle B, which, being provided with the perforations, as shown, through its upper wall C, causes the oil to be sprayed, as shown in Fig. 1, and, being lighter than the water, takes the position in the receptacle as shown at X. It escapes from thence through the pipes N into the chamber O of the burner, where it may be lighted. To afford a greater intensity of heat a greater supply of oil is allowed to pass from the reservoir into the chamber O, the over-supply in the chamber O

escaping through the notches or grooves *t* of the wall T into the chamber Q, and may thence escape through the notches or grooves *u* of the wall U into the chamber R, surrounded by exterior wall V.

The several air-openings *r*, *q*, and *o* are provided with the upwardly-extending and surrounding walls *r'*, *q'*, and *o'* to prevent the oil from escaping therethrough. The advantage of the series of air-openings located in the burner, as described, allowing the air to thoroughly permeate and spread the flame, will be evident.

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

A hydrocarbon-burner consisting of a pan, a flange or upturned portion surrounding the outer edge thereof, apertures for the admission of oil to the burner, a series of partition-walls arranged concentrically upon the upper surface of the bottom of the burner, their upper edges lying in the same horizontal plane, and the upper surface of the bottom of said burner being inclined downwardly from the center to the outer edge, thereby forming a series of oil-chambers of varying depth, a series of air-openings through said burner, and apertures through said walls for the passage of oil from one chamber to another, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HARRISON N. DAVIS.

Witnesses:
GUY L. COATES,
T. C. STEPHENSON.

Correction in Letters Patent No. 442,959.

It is hereby certified that the residence of the patentee in Letters Patent No. 442,959, granted December 16, 1890, upon the application of Harrison N. Davis, for an improvement in "Hydrocarbon-Burners," was erroneously written and printed "Armourdale, Jackson Co., Kansas," whereas said residence should have been written and printed *Armourdale, Wyandotte Co., Kansas;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 6th day of January, A. D. 1891.

[SEAL.]

CYRUS BUSSEY,
Assistant Secretary of the Interior.

Countersigned:

C. E. MITCHELL,
Commissioner of Patents.