(No Model.)

G. W. COPE.

OIL HEATING STOVE.

No. 504,020. Patented Aug. 29, 1893.

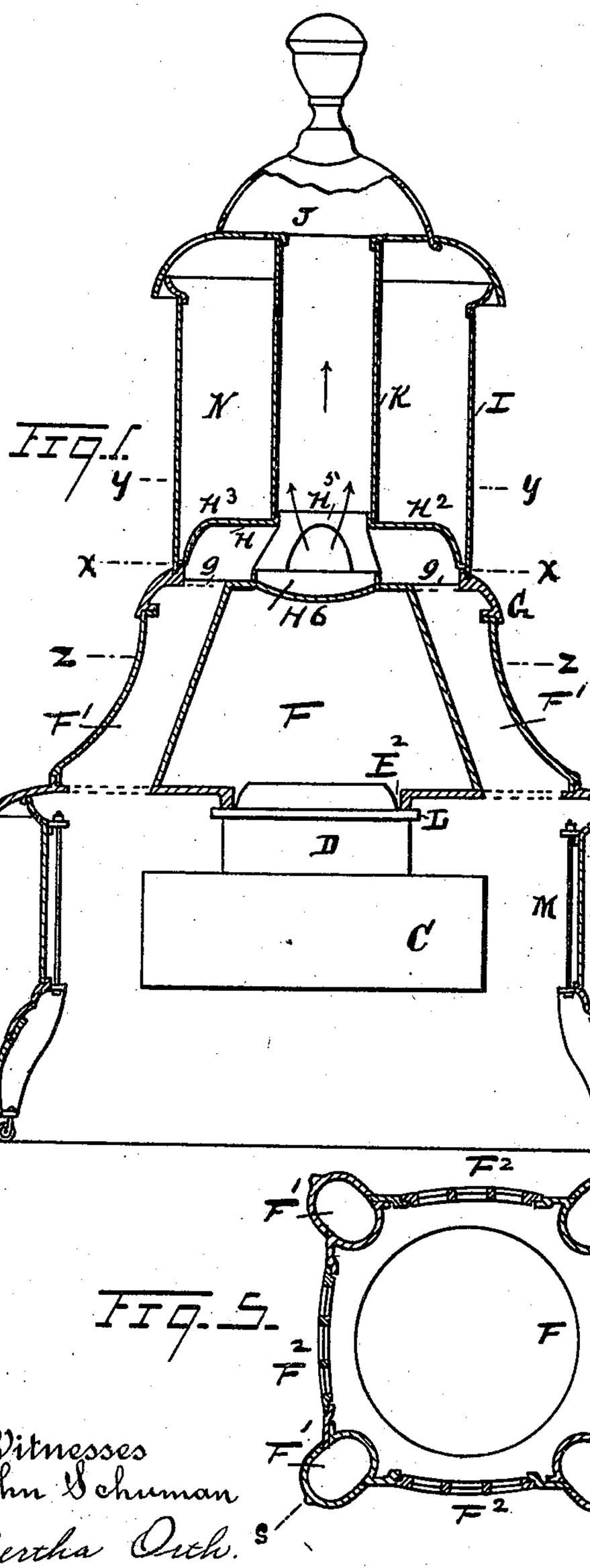

FIG. 1.

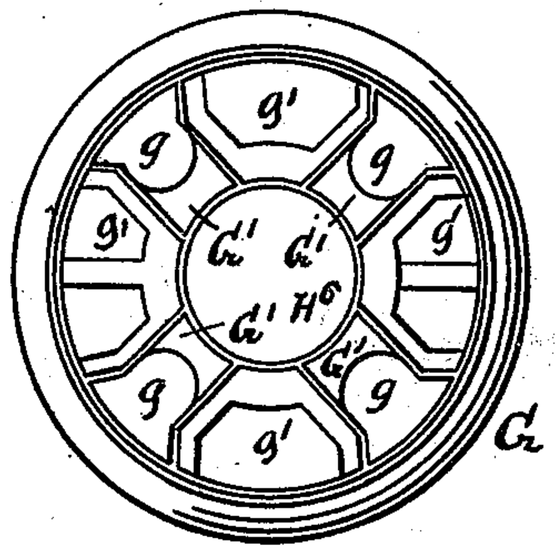

FIG. 2.

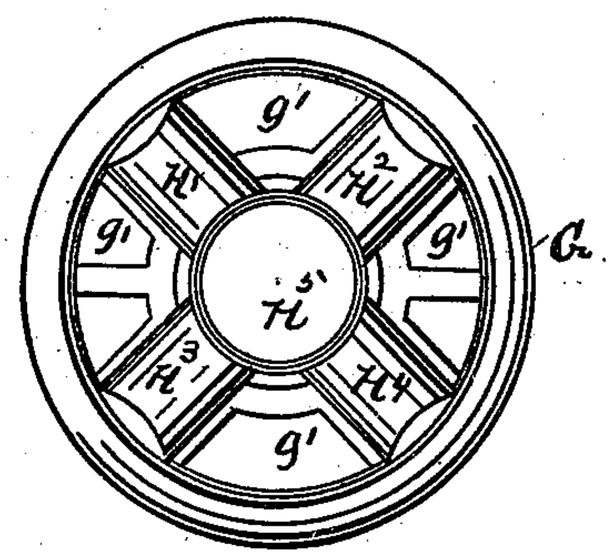

FIG. 3.

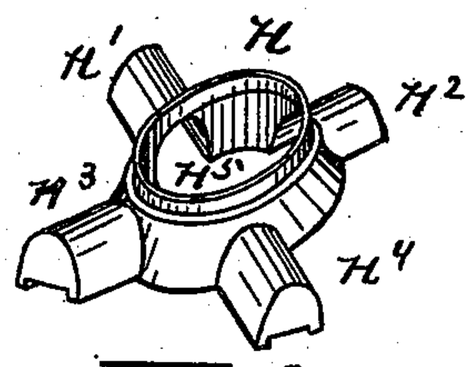

FIG. 4.

FIG. 5.

Witnesses
John Schuman
Bertha Orth.

Inventor
George W. Cope

By Attorney
Newell S. Wright

UNITED STATES PATENT OFFICE.

GEORGE W. COPE, OF DETROIT, MICHIGAN, ASSIGNOR TO THE ART STOVE COMPANY, OF SAME PLACE.

OIL HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 504,020, dated August 29, 1893.

Application filed December 19, 1892. Serial No. 455,618. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. COPE, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Oil Heating-Stoves; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in oil stoves, and more particularly to oil stoves for heating purposes.

The object of my invention is to provide such a stove of superior utility, simplicity and efficiency.

To these ends my invention consists of the construction, combination and arrangement of devices and appliances hereinafter specified and claimed, and illustrated in the accompanying drawings, in which—

Figure 1, is a vertical section of the stove embodying my invention, the section being taken on the line *s—s* Fig. 5, through opposite corners to show the flues F′. Fig. 2, is a horizontal section on the line *x—x* Fig. 1. Fig. 3, is a horizontal section on the line *y—y*, Fig. 1. Fig. 4, is a detailed view of the casting at the base of the inner tube and the drum of the stove. Fig. 5, is a horizontal section on the line *z—z*.

I carry out my invention as follows:

A, represents a leg-frame of the stove.

B, represents the walls of the tank chamber. C, is an oil tank in said chamber.

D, is a burner, with the wick chamber of which the oil tank communicates.

Over the top of the tank chamber is located a cover plate E.

F, is the combustion chamber. At each corner thereof are located vertically extended flue tubes F′, communicating through the cover plate and through the interior of the tank chamber with the exterior of the stove, at the base thereof.

G, is a plate located at the top of the flues through which said flues communicate as shown at "*g*," the plate being also perforated as shown at "*g′*," to permit the passage therethrough of the products of combustion from the combustion chamber.

F², represents mica doors located at the sides of the combustion chamber between the adjacent flues and cover plate E, and the plate G. Above said plate is located a plate or casting H, constructed with channeled arms H′, H², H³, H⁴, the arms being preferably arc-shaped in vertical cross-section. These arms are made open on the under side so as to receive the air passing upward through the flues F′, and having the marginal edges thereof fitted snugly down upon the perforated arms G′ of the plate G. These several arms, H′, H², H³, H⁴, communicate at their inner ends with a central opening H⁵. A drum I, is mounted upon the plate G, said drum being provided at the top with a perforated plate J, constructed to allow free passage therethrough of the heated air arising through the flues F′, and the combustion chamber.

K, is an interior flue engaging upon the central opening H⁵, of the casting H, the upper plate J, resting thereupon. By this construction it is evident that the air rising through the flues F′, passing through the channeled arms of the casting H, and through the inner flue K, escapes therefrom through perforations in the top plate J. The cover plate E, is constructed with a central opening E², the periphery of said opening setting down snugly upon the collar L, upon the top of the burner.

It will be perceived that by the construction above specified, the air through the flues about the combustion chamber and channeled casting or plate H and the inner flue K, has no communication, whatever, with the combustion chamber, and consequently is not affected thereby, except as the air therein is heated by contact with the products of combustion thereabout. It will also be perceived that an air passage M, is formed within the tank chamber communicating with the external air at the base thereof. Within the drum I, and exterior to the flue K, is thus formed an air chamber N, communicating with the combustion chamber through orifices in the plate G, as shown at H⁶. I prefer that the plate G should be made closed or solid at the center and that the perforations

therein, through which the combustion chamber communicates with the chamber N, should be toward the outer edge of said plate. Thus the combustion chamber has no communication with the interior of the flue K, the air flues F′ alone communicating with the interior of the flue K, these flues F′ communicating with the channeled arms H^2 leading into the flue K. The plate H is constructed, preferably, of an integral casting. The plate H is so formed with a common central opening, into which all the arms lead, said plate having a collar about the upper end of the central opening to receive the flue K.

What I claim as my invention is—

1. In an oil stove, the combination of a base, an oil burner, a combustion chamber, a plate G located above the combustion chamber, constructed with perforated arms G′, and with perforations "g'" between said arms, a plate H constructed with channeled arms open on the under side resting upon the arms G′ of the plate G, and communicating therethrough, a drum I, an interior flue K located above the plate H and communicating therethrough, and flues F′ communicating with said channeled arms, the chamber between said drum and flue K communicating through the perforations "g'" with the combustion chamber, substantially as described.

2. In an oil stove the combination of a base, an oil burner, a combustion chamber, a perforated plate G above the combustion chamber, a plate H constructed with channeled arms open on the under side resting upon the plate G, a drum I, an interior flue K located above the plate H, and communicating therethrough, and flues F′ communicating with said channeled arms, the chamber between the flue K and the drum communicating with the combustion chamber, substantially as described.

3. In an oil stove, having a combustion chamber and an air chamber N thereabove, a plate G constructed with a series of perforations "g'" through which the air chamber communicates with the combustion chamber, and with a series of perforations "g" at the periphery thereof, a plate H constructed with a central opening and with channeled arms resting upon the plate G over the perforations "g," an interior flue K communicating with the central opening of the plate H, and vertically extended air flues located at the corners of the combustion chamber, communicating through the perforations "g" with the extremities of said channeled arms, substantially as described.

4. In an oil stove, the combination of a base, an oil burner formed with a collar L, a cover plate E constructed with a central opening, the periphery of which rests upon said collar, a combustion chamber, a perforated plate G, a plate H resting upon the plate G, constructed with a central opening and channeled arms, a drum I, an inner flue K located upon the central opening of the plate H, and flues F′ communicating through the plates E and G with the channeled arms of the plate H, the chamber between the drum I and flue K communicating through the plate G with the combustion chamber, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE W. COPE.

Witnesses:
N. S. WRIGHT,
JOHN F. MILLER.