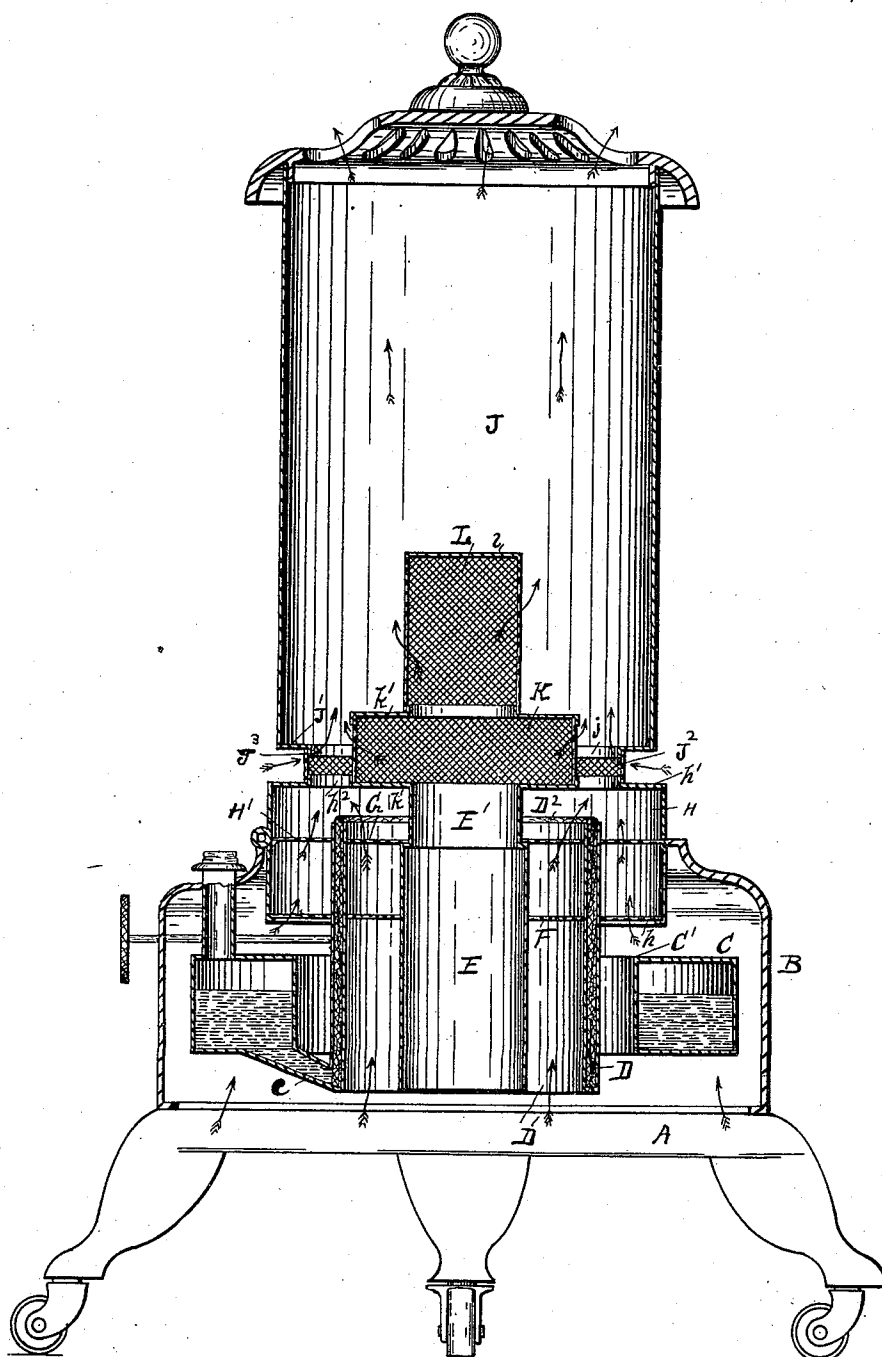


(No Model.)

E. G. MUMMERY.
OIL STOVE.

No. 530,849.

Patented Dec. 11, 1894.



WITNESSES

Otto Brenziger

M. A. Martin

INVENTOR

Edwin G. Mummery

By *HIS* Attorney

Wm. S. Wright

UNITED STATES PATENT OFFICE.

EDWIN G. MUMMERY, OF DETROIT, MICHIGAN.

OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 530,849, dated December 11, 1894.

Application filed May 9, 1894. Serial No. 510,606. (No model.)

To all whom it may concern:

Be it known that I, EDWIN G. MUMMERY, 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-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 drawing, which forms a part of this specification.

My invention relates to an improved oil stove having for its object superior efficiency, and it consists of the construction, combination and arrangement of devices hereinafter described and claimed, and illustrated in the accompanying drawing, which is a view of my invention in vertical section.

The purpose of my invention, more particularly, is to provide an oil stove in which the burner shall be so constructed and arranged as to secure more perfect combustion than has heretofore been secured in devices of this class and I carry out my invention as follows:

A represents any suitable base, and B is any suitable inclosing case for the oil tank and portions of the burner. Within the case B I locate an oil tank C. Projecting through the oil tank is a wick tube D, said tube constructed to form an interior air flue D'. Between the wick tube and the tank is an air space C'. The tank communicates with the wick chamber of the wick tube in the usual manner as through an inlet "c."

D² is the wick within the wick chamber of the tube D.

E is an interior flue located within the interior of the wick tube and spaced therefrom.

Within the flue D' I locate a perforated plate F preferably a little above the middle of the wick tube, another perforated plate G being located thereabove and toward the top of the air flue D'. The interior flue E is open at the base as is also the air flue D'. The upper end of the interior tube E is preferably contracted in diameter, as shown at E'. About the upper end of the wick tube, I locate an air chamber H extending downward about the upper end of the wick tube and there-

above. Into this air chamber H the flue D' communicates. The base of the chamber H I construct of perforated metal plate, as shown at "h," so as to admit air at the base of the said air chamber thereinto. Within the air chamber H, I also locate an additional perforated plate or diaphragm H' preferably a little above the middle of said chamber. The lateral portions of the air chamber H I form of sheet metal. At the top of the case of the chamber H, I locate an annular inwardly projected flange h' which may be made of sheet metal. The flange h' terminates at its interior periphery with an upwardly projecting flange h².

J denotes a drum located above the air chamber H and preferably spaced therefrom. I prefer to construct the base of said drum with an interiorly projected flange J', said flange terminating at its inner periphery in a downwardly projected flange "j." The flange h² and "j" are spaced one from another, and thereabout I locate a perforated plate J².

Above the upper portion E' of the interior flue E, I locate a distributing chamber K, the lateral portion of which is constructed of perforated metal, as shown. At the top and at the bottom of said chamber I locate collars of sheet metal, as shown at "k" and k'. Above the chamber K is a cylinder L, the lateral portion of which is constructed of perforated metal, the top thereof being constructed of sheet metal, as shown at "l." The cylinder L communicates at its base with the chamber K and the chamber K communicates at its base with the flue E. The perforated plate or collar J² is spaced from the chamber K affording room for the air and products of combustion to circulate therebetween, as shown at J³. The chamber K also communicates with the space J³ and with the interior of the drum J, while the cylinder L communicates with the interior of the drum J at the sides thereof.

The various perforated plates F, G, "h" and H', serve to atomize the air before it ascends, in the direction of the arrows, to mingle with the products of combustion in the chamber H at the top of the wick tube. As the products of combustion pass upward through the air space J³ an additional air

supply enters through the perforated plate j^2 to commingle therewith, while also a fresh supply of air is also commingled with the products of combustion through the chamber K, the air passing from said chamber at its sides in proximity to the products of combustion as they pass upward. Thus the products of combustion, with fresh supplies of air from within and from without, pass into the base of the drum J, and as they continue to pass upward an additional air supply is provided to mix therewith, through the sides of the cylinder L. In this manner an abundance of air is supplied to the burner and to the products of combustion, the air being thoroughly atomized by means of various perforated plates above described. I am enabled thus to secure a very superior and perfected combustion.

The perforated plate J^2 may or may not be provided between the chamber H and the drum, within the scope of my invention. The base B forms a tank chamber therewithin open at its base, as shown.

I would have it understood that instead of making various parts of sheet metal hereinbefore described, they may be made of cast metal if preferred, as the cylinder L and chamber H.

The air passing upward through the flue D' after being atomized in passing through the perforated plate F is further atomized or broken up in passing through the perforated plate G before being supplied to the process of combustion.

I do not limit myself to constructing the cylinder L perforated, as it may be closed laterally and at the top if desired. The use of the cylinder L is to contract the space thereabout through which pass the products of combustion. So also the chamber K and the setting inward of the plate or collar J^2 contracts the passage therebetween to concentrate the air upon the products of combustion passing therethrough. The heat, in operation, draws the air through the side of the chamber K and supplies it to the upper portion of the flame, to make the combustion more complete and perfect. For a medium fire, all necessary supply of air might be furnished through the perforated plates F, G, "h" and H'; but to give increased capacity, I provide the perforated chamber K, projecting said chamber laterally toward the collar J^2 , said collar being also preferably set inward and perforated so that through the collar J^2 and the chamber K an abundance of air is supplied to the top of the flame in the contracted passage therebetween, thereby insuring a continuance of perfect combustion as the flame enters the base of the drum. By these means a perfectly white flame is secured. As the air is drawn through the perforated parts K by the action of the heat, it is also atomized in passing through the per-

forations as it is brought into contact with the flame.

What I claim as my invention is—

1. In an oil stove provided with a case B, a tank chamber, a wick tube therein, an interior flue E within the wick tube forming an air flue D' therebetween, a distributing chamber K located above the flue E and communicating therewith, an air chamber H extending over and downward about the upper end of the wick tube communicating at the upper portion thereof with the flue D' and at the base with the tank chamber, a cylinder L above said distributing chamber and communicating therewith, a drum located about said cylinder and distributing chamber and extending thereabove, said chambers communicating with said drum, substantially as set forth.

2. In an oil stove, a tank chamber, a wick tube therein, an air chamber H communicating with the interior of the wick tube and with said tank chamber, a flue E located within the wick tube and spaced therefrom, a perforated distributing chamber K located above the flue E and communicating therewith, an air space J^3 about said distributing chamber, a cylinder L located above said distributing chamber, and a drum communicating with the air space J^3 , the distributing chamber K, and the cylinder L, substantially as set forth.

3. In an oil stove, a tank chamber, a wick tube therein, an air chamber H communicating with the interior of the wick tube and with said tank chamber, a flue E located within the wick tube and spaced therefrom, a perforated distributing chamber K located above the flue E and communicating therewith, an air space J^3 about said distributing chamber provided with laterally perforated walls, a cylinder L located above said distributing chamber, and a drum communicating with the air space J^3 , the distributing chamber K, and the cylinder L, substantially as set forth.

4. In an oil stove, the combination of a wick tube, an interior flue E forming an air flue D' therebetween, perforated plates located in the air flue D' , an air chamber H provided with a perforated base located about the upper end of the wick tube and communicating with the flue D' a perforated diaphragm in the chamber H, a laterally perforated distributing chamber K communicating with the flue E, a laterally perforated cylinder L communicating with the distributing chamber, and a drum located about said cylinder and distributing chamber and communicating therewith and with the air chamber H, substantially as set forth.

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

EDWIN G. MUMMERY.

Witnesses:

N. S. WRIGHT,

OTTO B. BAENZIGER.