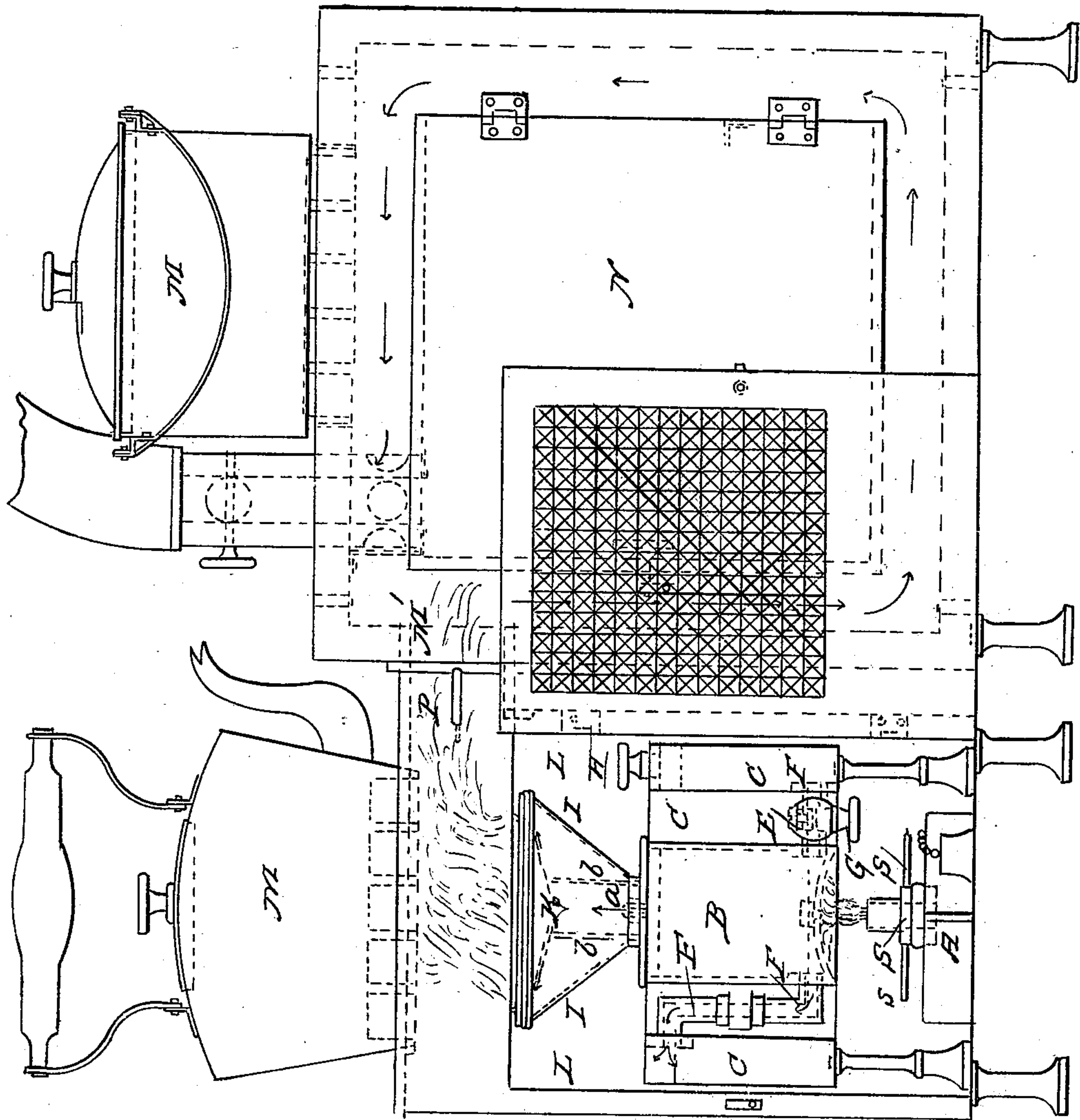


G. R. OSBREY.
Heating Apparatus.

No. 26,048.

Patented Nov. 8, 1859.



WITNESSES:

WITNESSES:
Henry Martin
Isaac A. Bennell

INVENTOR:

INVENTOR:
George R. Chaff

UNITED STATES PATENT OFFICE.

GEORGE R. OSBREY, OF PROVIDENCE, RHODE ISLAND.

HEATING APPARATUS.

Specification of Letters Patent No. 26,048, dated November 8, 1859.

To all whom it may concern:

Be it known that I, GEORGE R. OSBREY, of Providence, in the county of Providence and State of Rhode Island, have invented a new and Improved Heating Apparatus, which May be Applied for Cooking and other Purposes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawing, making a part of this specification, in which is represented a side elevation of the apparatus placed within a chamber of a stove designed for cooking purposes.

The nature of my invention consists in the method of connecting the alcoholic reservoir and vaporizer in an apparatus for generating vapor from alcohol, for the purpose of regulating the supply of fluid to the latter, the same being consequent upon and proportionate to the quantity vaporized and consumed, and in combining therewith a closed conical disseminator inclosing a convex deflector, and surmounted by a diaphragm of wire gauze, for effecting a proper combustion of the vapor arising therefrom, the whole constituting a self regulating and economical heating apparatus.

To enable others skilled in the art to make use of my invention, I will proceed to describe the same with reference to the drawings.

In such drawing A represents a lamp of ordinary construction for burning alcohol, having however a surrounding tube S which in being turned by means of wires s, s, is raised or depressed at pleasure to regulate the flame. This lamp is placed beneath a closed cylindrical vaporizer B, which is surrounded on two or more sides by an alcohol reservoir C, C, the two vessels being connected by means of the pipes E, and F. The shorter of the pipes E, has a stop cock G, and admits the alcohol from the bottom of the reservoir to the bottom of the vaporizer.

The office of the stop cock is simply to cut off the communication between the two vessels while the reservoir is being filled. At all other times it remains wide open.

The longer bent pipe F, connects the bottom of the vaporizer with the top of the reservoir, (as shown in the drawing). Its office is to convey to the space above the alcohol in the reservoir a discharge of

vapor; such discharge only takes place when the level of the liquid in the vaporizer has fallen below the opening of the pipe thereinto at *f*. The pressure in the reservoir from this discharge of vapor, acts in the same manner with an admission of atmospheric air, and the fluid flows into the vaporizer through pipe E, until the opening *f*, is closed by the same and the level restored.

It is obvious from what is mentioned above, that the reservoir must be air-tight, the only opening from without being that stopped by the plug H, through which the vessel is filled.

The tube *a* at the top of the vaporizer forms an escape or outlet for the vapor to pass into the conical disseminator I. The opening in this tube is of the same size with that in the plug of the stop cock, and pipe E. By this arrangement, the expansion consequent upon vaporizing, of the quantity of alcohol which the pipe will admit to the vaporizer, escapes at the outlet *a*, with such force as to create a blast therefrom. The disseminator I, is covered at the top with a diaphragm of wire gauze and is firmly secured at its base in a tight joint to the head of the vaporizer.

Within the disseminator and supported by standards *b, b*, in its proper position is the deflector *k*, which is circular in form, and presents a convex surface to the jet of vapor issuing from the tube *a*. Were it not for the interposition of this deflector, the vapor would pass in a jet or forcible stream upward directly through the meshes of the diaphragm and escape into space without being inflamed. This apparatus so made is placed within a chamber L, whose top is provided with suitable openings for one or more kettles M, or other cooking utensils, the bottom of which may be formed with a series of recesses or corrugations for the reception of "the heated volatile products arising from the flame or the diaphragm of the disseminator."

Communicating with the fire chamber L is a flue space M', which extends around the oven N, and opens into a discharge flue O, furnished with a damper P. The upper part of the space M' may receive one or more boilers or boiling vessels Q.

Operation: Close the stop cock G, fill the reservoir to a level with the opening of the pipe F, into the same. Insert the plug

tightly, turn the stop cock wide open, when the fluid will flow into the vaporizer through the pipe E, and a supply of air will pass at the same time through pipe F, from the
 5 vaporizer to the reservoir, until the fluid has attained a sufficient level to close the opening in pipe F, at *f*, thereby cutting off the supply of air to the reservoir, and consequently stopping the flow of fluid to the vaporizer. The lamp A is then lighted beneath the vaporizer, the alcohol becomes vaporized expels the air from the vessel and observes the same action with air in maintaining a constant level therein. The vapor
 10 increases in density, and escapes at the tube *a*, with considerable force in a jet or blast upward against the deflector K, is deflected toward the sides of the disseminator I, and thence ascends through the meshes of the
 20 gauze where it may be inflamed.

I am aware of an existing invention patented by P. S. Devlan Jan'y 26, 1858, for heating apartments by steam, in which the supply of water is regulated by setting the
 25 stop cock admitting such supply, to the generator, and by returning the water of condensation to the reservoir to be used over again and again. I would not therefore be understood as claiming such arrangement
 30 as is therein employed, my invention having a different combination, and is dependent on a different action.

I do not claim an inverted cone or tube,

covered at the top with a wire gauze diaphragm, as employed by Andrew Mayer in
 35 his patent of July 11th, 1854, for mixing gas with air. Nor do I claim a cone of wire gauze surrounded by a cylinder of gauze or pierced metal for burning mixed gases and oil, as patented by Wm. F. Shaw. I am
 40 also aware that a cone or deflector, combined with a cone shaped pipe having a bonnet or covering of wire gauze has hitherto been employed for various purposes. I therefore disclaim such arrangement irre-
 45 spective of the peculiar arrangement herein set forth.

I claim—

1. The combination of an alcohol reservoir, and vaporizer, with a lamp for heating the same, when such vessels are connected by a liquid pipe E, and a vapor pipe F, said pipes acting in such connection to maintain a constant level within the vaporizer, in the manner and for the purpose substantially as herein set forth.
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2. I also claim combining with such device for vaporizing a conical disseminator I, and a convex deflector K, arranged substantially as specified and for the purpose herein set forth.
 60

GEO. R. OSBREY.

Signed in presence of—

HENRY MARTIN,
 ISAAC A. BONNELL.