

(No Model.)

E. S. HOYT.
GAS BURNER.

No. 546,765.

Patented Sept. 24, 1895.

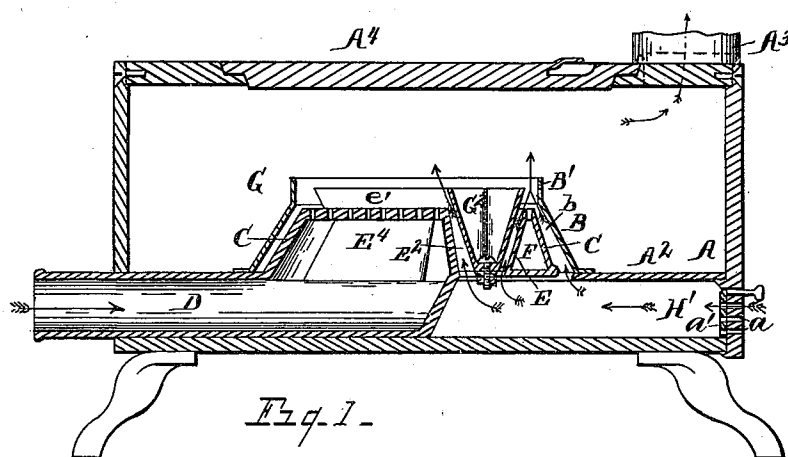


Fig. 2.

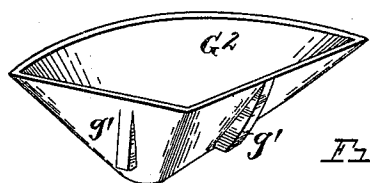
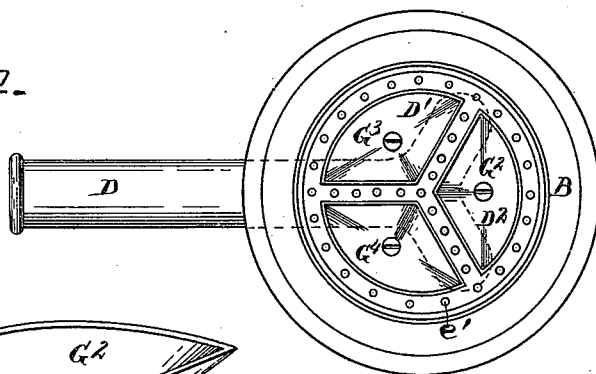


Fig. 4.

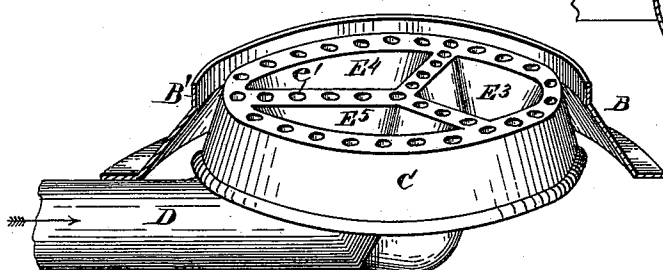


Fig. 3.

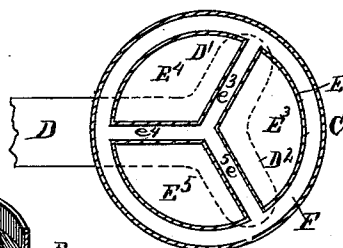


Fig. 5.

WITNESSES

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GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 546,765, dated September 24, 1895.

Application filed February 23, 1894. Serial No. 501,181. (No model.)

To all whom it may concern:

Be it known that I, EZRA S. HOYT, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Gas-Burners; 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 a gas-burner; and it consists of the combination of devices and appliances hereinafter specified and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section illustrating a modification of my invention, showing the same applied to a gas-stove. Fig. 2 is a plan view of the burner embodied in Fig. 1. Fig. 3 is a view in perspective showing parts removed. Fig. 4 is a view in perspective of one of the spreaders, and Fig. 5 is a horizontal section of the burner.

One of the main purposes of my invention is to provide a burner of this class whereby a more efficient supply of oxygen shall be provided to commingle with the gas to support perfect combustion and to secure superior efficiency, the parts being simple and economical in their construction and operation.

Another object of my invention is to provide for centrally emitting the flame from the burner, so that the heat may be thrown therefrom more directly under the middle of a cooking or other utensil above the burner. To these ends I carry out my invention as follows:

A represents a stove to which my burner may be applied, although I do not limit the application of my burner to any particular form of stove.

B denotes the exterior case of the burner.

C represents an interior wall or cylinder spaced from the case B and supported in any suitable manner, as upon a gas-inlet pipe D.

E denotes an interior drum or wall spaced from the wall C, forming a gas-chamber F therebetween. The wall E is constructed to

form radiating gas-chambers e^3 , e^4 , and e^5 , preferably communicating with the chamber F and one with another. Said chambers open at the top in any suitable manner, as through perforations e' . I divide the drum E into three auxiliary drums E^3 , E^4 , E^5 , forming the chamber F, and the radiating chambers e^3 , e^4 , and e^5 . I also provide spreaders G^2 , G^3 , and G^4 , one for each of the drums E^3 , E^4 , and E^5 . As so constructed it will be evident that the flame will be emitted from the top of the annular chamber F, and also from the top of the radiating chambers e^3 , e^4 , and e^5 . By this means the flame will not simply be emitted about the exterior of the burner, but will also be radially extended to the center, so as to bring the heat to the center of a cooking or other utensil located thereabove.

In a stove of the form shown in Fig. 1 of the drawings the stove itself is formed with an air-flue H'. The air-flue is a part of the stove construction, the stove-case being perforated, as shown at a , to admit air thereinto. The gas-inlet pipe D may communicate with the chambers e^3 , e^4 , and e^5 in any suitable manner. Thus, for example, said inlet-pipe may be formed with arms (indicated in dotted lines in Figs. 2 and 5 at D' and D^3) opening into the base of the chambers e^3 , e^4 , and e^5 , the body of the pipe D communicating with the base of the chamber e^4 . I prefer that the spreaders G^2 , G^3 , and G^4 should extend upward above the top of the drums E^3 , E^4 , E^5 , as indicated in Fig. 1, to form a contracted passage between them and the surrounding case B. The spreaders G^2 , G^3 , G^4 are separated from the adjacent drums E^3 , E^4 , E^5 to form air passages or flues therebetween. This may readily be accomplished by constructing said spreaders with lugs g' . The stove A may be provided with an inlet-pipe D, leading to the burner, although, preferably, said inlet-pipe is formed as an integral part of the burner. It will be seen that as so constructed the burner is provided with a very efficient supply of oxygen to support combustion.

An important feature of my invention (illustrated in Fig. 1) consists in excluding the access of any air to the burner by means of a plate A^2 , except as the air is admitted to the burner therebeneath, as through the flue H', the walls of the stove being tight about the

burner, except for the provision of the flue A³ for the products of the combustion and a customary lid A⁴ above the burner. By this construction the air is exclusively led into the burner from beneath through the chambers about the gas-chamber, causing an effect analogous to that of an ordinary blowpipe, concentrating all drafts of air into the flame at the point *f* and thereabove into passage G', thereby promoting perfect combustion and securing a high degree of heat. When my improved burner is applied to a gas range or stove, as shown in Fig. 1, I prefer that the upper portion of the case B should be formed with a vertical flange B'. As so constructed, it is evident, the air being entirely admitted to the burner below the plate A², that the flame is directed vertically upward underneath the cooking utensil applied to the top of the stove or range and is not diverted away from the base of said utensil in the direction of the flue A³, as when draft is given to a gas-burner by opening the stove at a point opposite the burner or above the plate A². I prefer to provide the range with a damper *a'* to control the admission of air through the orifices *a* or into the duct H'. By this construction and arrangement I am enabled to secure superior results with a much more economical use of gas than has hitherto been accomplished by any burner of previous construction. In a range so constructed it is evident, moreover, that the heat is so deflected that the heat striking against the top of the range is deflected against the plate A², thereby tending to heat the fresh air admitted through the duct or air-chamber H', so that it shall be admitted to the burner in a correspondingly-heated condition, thereby increasing the heating capacity of the range. It will be seen that this structure provides a burner of superior efficiency, inasmuch as flame is emitted therefrom, as underneath a cooking utensil, not only from the annular gas-chamber F at the periphery of the burner, but also from each of the radiating gas-chambers *e*³ *e*⁴ *e*⁵, by which the flame is brought to the center of the cooking utensil, and from the center extended radially in several directions outward to the annular chamber F. The heating capacity of the burner is thus greatly multiplied, not only by the provision of the additional capacity of the said radiating chambers in

addition to the flame emitted from the annular chamber F, but the flame is at the same time so distributed underneath the cooking utensil from the center radially to the annular flame that superior and more satisfactory results are thereby obtained, in addition to the fact that more perfect combustion is also secured by the construction and arrangement of the different parts of the burner.

The plate A² serves to form, in connection with the walls and base of the stove, the air flue or chamber H', at the same time serving as a partition within the stove to exclude the access of any air to the burner, except as it passes through the air-chambers of the burner from beneath said plate.

What I claim as my invention is—

1. A burner composed of an outer chamber, perforated at its top, and a number of central chambers extending inwardly from the outer chamber and communicating at the center of the burner, and also perforated at their tops; combined with deflectors, placed in the openings between the chambers, and which correspond in shape to the openings, and are of a greater depth than the burner, so as to extend above its top surface, and which deflectors limit the quantity of air passing through the openings and hold it in contact with the heated walls of the burner, substantially as shown.

2. A burner composed of an outer chamber, perforated at its top, and a number of central chambers extending therefrom and united at their inner ends, and also perforated at their tops, combined with, deflectors placed in the openings between the chambers, and which deflectors are of a greater depth than the burner, so as to project above its top, and which correspond in shape to the openings in which they are placed so as to hold the rising currents of air in contact with the heated walls of the burner; and an outer surrounding deflector which corresponds in shape to the burner, and projects above its top, substantially as set forth.

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

EZRA S. HOYT.

Witnesses:

N. S. WRIGHT,

OTTO B. BAENZIGER.