

(No Model.)

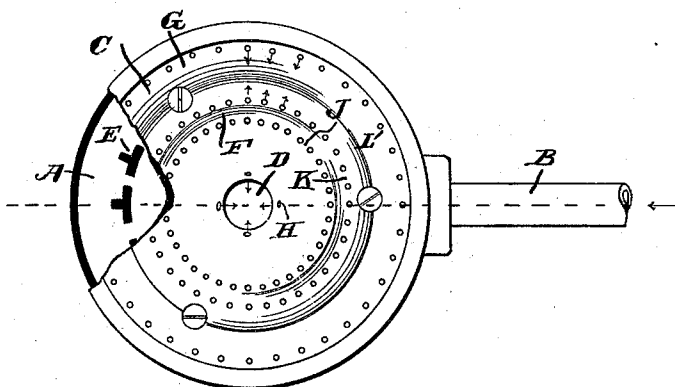
L. KAHN.

BURNER FOR GAS STOVES.

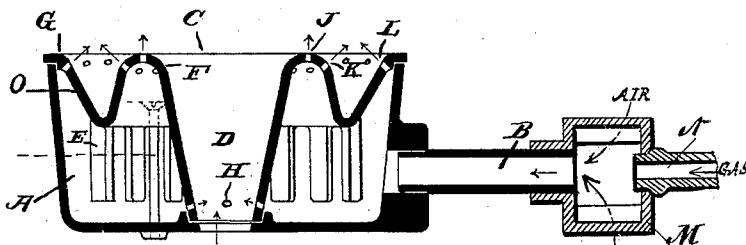
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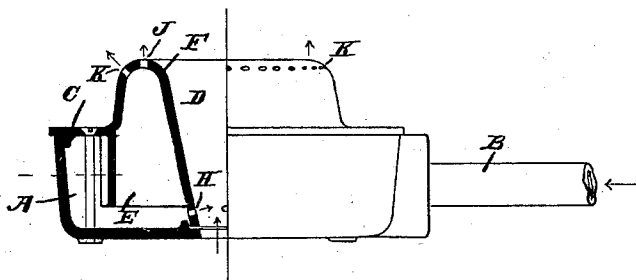
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Sazard Kahn*

Witnesses:  
*W. Edwards*  
*A. Myers.*

Inventor,  
*by James W. See*  
Attorney.

# UNITED STATES PATENT OFFICE.

LAZARD KAHN, OF HAMILTON, OHIO.

## BURNER FOR GAS-STOVES.

SPECIFICATION forming part of Letters Patent No. 401,783, dated April 23, 1889.

Application filed May 31, 1888. Serial No. 275,594. (No model.)

*To all whom it may concern:*

Be it known that I, LAZARD KAHN, of Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Burners for Gas-Stoves, of which the following is a specification.

This invention pertains to a gas-burner for use in connection with gas-stoves, and will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a plan of a gas-burner illustrating my improvements, a portion of the top being broken away to exhibit inner portions in horizontal section; Fig. 2, a vertical diametrical section of the same, shown in connection with the usual mixer on its inlet-pipe; and Fig. 3, a side elevation, half-vertical diametrical section, illustrating the burner with the outer series of jet-holes, L, omitted.

Referring, for the present only, to Figs. 1 and 2 of the drawings, A indicates the body of the burner, the same being simply a closed metallic receiver, the illustration showing this receiver as circular in plan, which form, however, is not essential; B, the supply-pipe tapped into one side of the receiver and adapted to conduct thereto, in the usual manner and by the usual means, the supply of air and gas in the proper proportions for combustion; C, the top of the burner formed by the roof of the receiver; D, an air-tube reaching entirely through the burner from top to bottom, this tube being open below and above, and having, preferably, an upward flare or enlargement, so that its walls present overhanging outer surfaces to the gas within the receiver and battered inner surfaces to the air and gas within the tube; E, an annular curtain within the receiver and formed, preferably, of a series of vertical metallic prongs disposed within the chamber, these prongs being formed integral with the top plate of the burner and arranged in complete series around the tube D, the prongs having a T-shaped horizontal section, or some equivalent section, adapted to give them an increased superficial exposure to the gas within the receiver; F, an annular bead or swell formed by the top of the burner immediately around the tube D, this bead resulting from the

curved outward and downward condition given to the upper portion of the wall of the tube D; G, a bead or rim at the top of the burner outside of and around the bead F, the bead G forming the outer top rim of the burner; H, jet-holes at the base of the tube D, leading from the interior of the receiver to the interior of the tube; J, a series of jet-holes in the top of the bead F, leading vertically upward from and out of the receiver; K, a series of jet-holes in the bead F, around and outside of the series of jet-holes J, the series K leading diagonally upward and out of the receiver; L, a series of jet-holes in the inner wall of the bead G, this series leading upwardly and inwardly out of the receiver; M, the mixer on the supply-pipe, such mixer being the ordinary open-sided arrangement, by means of which the jet of gas shooting from the gas-pipe through the mixer into the supply-pipe draws in through the sides of the mixer a quantity of air to enter the burner with the gas; N, the gas-pipe by which the gas enters the mixer, and O the annular depression in the top of the burner between the two beads.

The gas and air enter the receiver through the pipe B more or less perfectly mixed. The curtain E intercepts the direct flow of the mixture and causes it to move in diverse paths and partake of a tumbling motion, whereby the gas and air become thoroughly mixed before reaching the jet-holes. The curtain interception to the direct flow of gas from the pipe causes much of it to dive below the prongs and be directed inwardly into impingement against the tube D, the tapering form of the tube serving in maintaining the gas in close contact with the wall of the tube as the gas moves upwardly into the bead F. The gas is ignited at the jet-holes J, K, L, and H. The jet-holes J project the flames directly upward. The jet-holes K and L, inclining, respectively, toward each other, commingle their flames and produce a flame with a broad top surface, a flame tending also to direct much of its heat downwardly, thus causing the top of the burner below these jets, and also the prongs E, to become very hot. The gas within the receiver, thus brought into contact with the hot prongs, becomes highly heated, the extended surface of the

prongs facilitating the absorption of heat from them by the gas. The gas burning within the tube D at the jet-holes H keeps the tube highly heated. The result of this is the further heating of the gas within the receiver, and also the heating of the air passing upwardly through the tube, this air going to supply the additional air of combustion to the jet-holes. The jet-holes H at the base of the tube D form a sub-burner, whose only office is to heat the tube and a current of air passing upwardly therethrough, and these jet-holes may be very few or very small, or both, and still serve their purpose.

In Fig. 3 the outer bead, G, and its series of jet-holes L are omitted.

I claim as my invention—

1. In a gas-burner, a closed receiver having an annular series of jet-holes at its top and a vertical air-tube leading downwardly from within said series of jet-holes, said air-tube being open to the atmosphere at its lower end, and having at its base a series of jet-holes, placing the interior of the tube in communication with the interior of the receiver, whereby flames are produced at said upper jet-holes and supplied by a column of air rising through said air-tube and heated by flames at said lower jet-holes, substantially as set forth.

2. In a gas-burner, the combination, substantially as set forth, of a receiver, a pipe in communication therewith for the supply of gas and air, and an air-tube vertically through said receiver within said series of jet-holes and enlarged from its base upward and provided with jet-holes at its base leading from within the receiver to within the air-tube.

3. In a gas-burner, the combination, substantially as set forth, of a receiver, a pipe in communication therewith for the supply of

gas and air, a continuous bead formed in the top of said receiver having a series of jet-holes leading vertically through the top of the bead, a series of jet-holes in said bead and having also outside said first series of jet-holes and leading upward and outwardly from the receiver and prongs disposed within the receiver, and joining the metal of said bead.

4. In a gas-burner, the combination, substantially as set forth, of a receiver, a pipe in communication therewith for the supply of gas and air, a bead formed at the top thereof and provided with a vertical series of jet-holes and with an outer series of jet-holes upwardly and outwardly inclined, and a second bead formed at the top of the receiver around said first-mentioned bead and provided with a series of jet-holes upwardly and inwardly inclined.

5. In a gas-burner, the combination, substantially as set forth, of a receiver having a series of jet-holes in its top, a pipe in communication therewith for the supply of gas and air, and a circle of prongs projecting downward from the top of the receiver to near the bottom thereof.

6. In a gas-burner, the combination, substantially as set forth, of a receiver having a series of jet-holes in its top, a pipe in communication therewith for the supply of gas and air, a tube reaching vertically through the receiver and disposed within said series of holes and having jet-holes in its base leading from the receiver to the tube, and a series of prongs disposed within the receiver between the outer wall thereof and said tube.

LAZARD KAHN.

Witnesses:

J. W. SEE,

W. A. SEWARD.