J. J. WEST.

Gas-Stove.

No. 163,344. Patented May 18, 1875.

Fig. 1

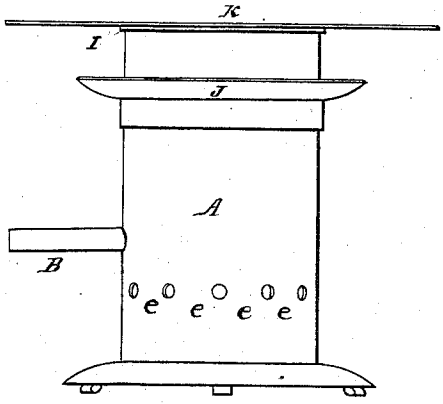
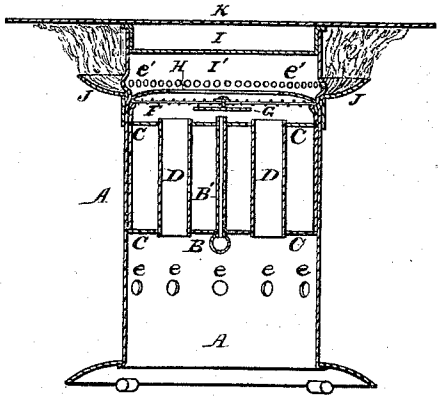


Fig. 2



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN J. WEST, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN GAS-STOVES.

Specification forming part of Letters Patent No. **163,344**, dated May 18, 1875; application filed March 5, 1875.

To all whom it may concern:

Be it known that I, JOHN J. WEST, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gas-Stoves, of which improvements the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the said improvements, reference being had to the accompanying drawing forming a part hereof, and in which—

Figure 1 is a side elevation of my improved stove; and Fig 2, a vertical central section thereof.

Like letters of reference indicate like parts.

In the drawing, A represents the outer wall or case of the stove. This part of the stove may either be open at the bottom, and supported in any suitable manner, or it may be perforated, as shown at *e e*, to admit the air, or these perforations may be employed in connection with an open bottom, for the same purpose. B is a gas-pipe terminating in the vertical slender pipe or tube B′, arranged in the central part of the stove. C is a partition or diaphragm arranged across the upper part of the stove, as shown; and D D are vertical flues passing entirely through the said partition. The pipe B′ also passes through this partition, and terminates just above it. F is a diaphragm of wire-cloth arranged a little way above the flues D D, and pipe B′. G is a diffuser arranged directly over the pipe B′. H is an annular arched flange projecting from the wall A inwardly, and arranged above the diaphragm F. *e′ e′* are openings in the wall A, and above the flange H; a continuous opening, however, may be employed instead of these perforations. I is a removable piece or cap resting on the upper edge of the wall A. J is a flange projecting outwardly from the wall A, and arranged just below the openings *e′ e′*. The upper face of this flange is preferably concave, as shown. K represents the article to be heated. The wall of the stove extends sufficiently above the openings *e′ e′*, to form a considerable chamber below the part I, as shown at I′, and a considerable space between the parts J and K.

In order to use my stove, the part I is arranged as shown, and the pipe B is connected to a gas-tip by means of a flexible tube. When the gas is turned on, it passes out at the end of the tube B′, is spread in all directions by the diffuser G, passes through the diaphragm F, strikes the flange H, and is deflected by it, enters the chamber I′, is again deflected by the part I, and passes out through the openings *e′ e′*, where it may be ignited. The flame, owing to the pressure of gas and air, and to the form and arrangement of the flange J, which protects it at this point from the influence of upward currents, will be carried to the edge of the said flange, where it forms a continuous sheet, and then extends upward, as represented in Fig. 2, thus making a very large flame in proportion to the size of the pipe B′. By this means the air within the stove is thoroughly mixed with the gas, and when the stove is thoroughly heated a current of air will enter the bottom of the stove, or the holes *e e*, pass upward through the flues D D, become highly heated and mixed with the gas, and pass out with it, thus causing the flame to be impinged with greater force upon the flange J than results from the mere pressure of gas, and producing, to a considerable degree, the effect of a blow-pipe, besides further reducing the volume of gas required to produce a given degree of heat. The radiating surface, as will be perceived, is large in proportion to the size of the stove, which will be found to be exceedingly useful, for many purposes, as a heater merely. In order to cook by means of this stove, the article to be cooked or heated is placed across the top of the stove. The gas will be mixed with the air and pressed out by the latter, even if the diffuser G, diaphragm F, and flange H are not employed; but I deem it preferable to employ the parts in the manner described, for the purpose of producing an improved result.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The chamber I′, inclosed by the outer walls of the stove, and having therein the ports or openings *e′ e′*, in combination with

the shield or flange J projecting from the outer walls and arranged somewhat below the said ports, substantially as shown and described, and for the purposes set forth.

2. The combination of the pipe B′, flues D D, annular flange H, and chamber I′, having therein the ports or openings *e′ e′*, all operating together, in connection with a diffuser, in a gas-stove, substantially as and for the purposes specified.

3. The combination of the pipe B′, flues D D, diffuser G, diaphragm F, flange H, openings *e′ e′*, and chamber I′, substantially as and for the purposes specified.

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Witnesses:
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