

(No Model.)

P. I. MILLER.

GAS BURNER FOR HEATING STOVES OR GRATES.

No. 503,705.

Patented Aug. 22, 1893.

Fig 1

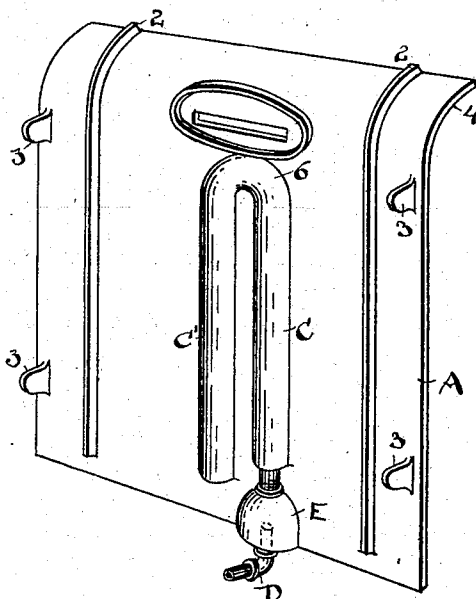


Fig 2

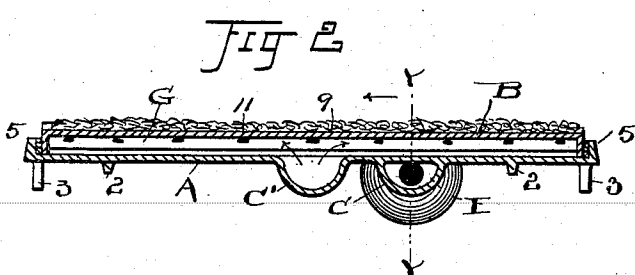
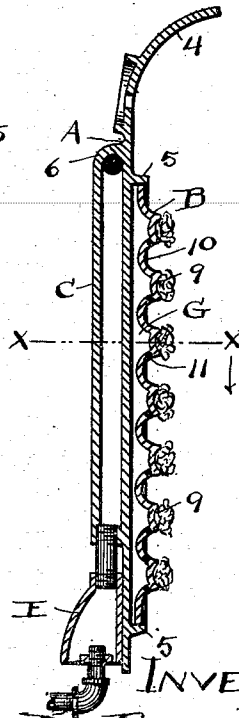


Fig 3



WITNESSES.

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PETER I. MILLER, OF CLEVELAND, OHIO, ASSIGNOR TO THE MILLER GRATE COMPANY, OF SAME PLACE.

GAS-BURNER FOR HEATING STOVES OR GRATES.

SPECIFICATION forming part of Letters Patent No. 508,705, dated August 22, 1893.

Application filed February 6, 1893. Serial No. 461,123. (No model.)

To all whom it may concern:

Be it known that I, PETER I. MILLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Gas-Burners for Gas Heating Stoves or Grates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a gas burner for gas heating stoves or grates, the said burner being of the variety having a large combustion surface on its face provided with gas outlet orifices at intervals, and with asbestos or other like inflammable material arranged about the openings, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a rear view in perspective of one of my improved burners, and Fig. 2 is a cross section thereof corresponding to line *x, x*, in Fig. 2. Fig. 3 is a vertical sectional elevation on a line corresponding to line *y, y*, Fig. 1.

The burner as here shown is made of two principal front and rear parts A and B. The part A may be termed the back plate of the burner provided with longitudinal strengthening ribs 2 and lugs or ears 3 for holding it in position, and having its top curving forward, as at 4, to form a heat deflecting surface to carry the heat outward into the room and which may be made ornamental if desired. Upon its front, the said plate A has flanges 5 extending along both sides thereof and across the top and bottom and forming in a sense a rectangular frame into which the face plate B is set and within which the edges thereof are firmly held and closely sealed against the escape of gas. Upon the back of the said back plate A is the gas distributing passage or channel C, C'. This channel receives the gas from the supply pipe D entering the mixer E and flowing thence into the channel C, C', as seen more clearly in Fig. 3. It will be observed that the upward channel or passage C is closed except at its ends, and at its top is connected with the downward distributing channel or passage C' by the

elbow 6, forming a continuation of one stem of the channel into the other. This downward stem C' is cast open at the front its full length, as shown in broken section in Fig. 1 and in cross section in Fig. 2, while the stem or portion C of the said channel is cored out and closed except at its ends, as described. The gas enters as usual through the pipe D into the mixer E, where it receives the proper proportion of air, and the mixture passes thence into the channel C and is carried upward and around through the elbow 6 into the stem C' and distributed thence to the chamber or space between the parts A and B. The said chamber is shown in cross section in Figs. 2 and 3, which also discloses its proportions. This method of introducing the gas to the burner is not only novel and original in this invention, but it is a very great advantage in a burner of this kind.

I have found in practical experience with burners of this general character that when the gas is admitted into the chamber between the parts A and B from the bottom of the burner and is distributed upward, the gas cannot be turned down low without the lower jets or openings going out, and leaving whatever burning there may be only from the upper rows of jets. This of course is objectionable because it shows unequal distribution and prevents uniform burning of the gas, and when some of the jets go out, there will be more or less gas escape therefrom, vitiate the atmosphere in the room, and make the burner objectionable and offensive. This serious objection is wholly overcome by the construction herein shown and described whereby the gas is supplied to the burner from the top and distributed downward instead of from the bottom, as formerly. In this construction as I have here shown, the gas travels the whole distance up and through the supply passage C into the downward portion of the channel C', and hence, the gas distribution to the chambers G is wholly from above downward as already described. This gives me a uniform pressure of the gas in the burner, and I am therefore enabled to turn the gas down to any degree which will support combustion and have absolutely uniform combustion over the entire surface of the burner from bottom to

top and from side to side with a like flame about each and all of the jets.

Another advantage of this construction is the heating of the commingled air and gas in the channel C by reason of its location immediately upon the burner and forming a part thereof and becoming thoroughly heated, thereby heating the mixed air and gas and greatly contributing to its perfect and prompt combustion when it escapes from the burner, and affording a beautiful blue flame when it burns.

Another advantage is the overcoming of back lighting or ignition at the mixer E, as heretofore has been experienced when the distribution of the gas was up from the bottom and through a single channel instead of the double channel here shown. Of course if a burner were thus back lighted it would consume the gas at the mixer and the burner would be worthless, and this was a very great danger and objection to the old style of burner. This objection is wholly overcome and prevented by my construction.

The face plate B is provided with a series of transverse ribs 9 and channels 10 alternately across its face at regular intervals, as seen in Fig. 2, and gas jets or orifices 11 are shown on the under side of the ribs 9. Asbestos, wool or other like material is affixed to the said ribs 9, and the gas escaping through the perforations 11 burns in and about the said non-combustible material in the usual way and gives to the whole front of the burner an evenly distributed and handsome blue flame. So far as the supply and distribution of the gas to the burner are concerned, it would be the same if the supply pipe were connected directly with the top of the distributing channel C', but that would deprive the combined gas and air of being heated in the channel C, which I esteem a very material advantage. The chambers—G—in the burner between the front and back parts thereof consist chiefly in the space between the corruga-

tions or ribs of the front plate and the front of the back plate, the appearance of one of said channels or chambers in longitudinal section being shown in view Fig. 2. The gas supply from the down channel—C'—traverses these chambers at their back and distributes the gas to each from top to bottom, substantially as shown and described.

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

1. The gas burner described, having internal chambers running from side to side, and a gas supply channel crossing said chambers at their rear and opening into the same, said channel having its gas supply at the top of the burner, and the air and gas mixer at the bottom of the burner, substantially as set forth.

2. The burner described having a gas supplying channel on its back extending from its bottom to near its top and a gas distributing channel extending down across the back of the burner to feed the gas to the burner chambers, and a flange about the front of said back part, in combination with the front of the burner secured to the said back part by the flange thereof and having chambers transversely of the burner, substantially as set forth.

3. In a gas burner, the back part having the parallel up and down gas supply and feed channels, the up channel being closed except at its ends and the down channel open along its front, in combination with a front part for said burner formed with chambers running transversely of the burner and in communication with said down channel, substantially as set forth.

Witness my hand to the foregoing specification this 26th day of January, 1893.

PETER I. MILLER.

Witnesses:

H. T. FISHER,
GEORGIA SCHAEFFER.