

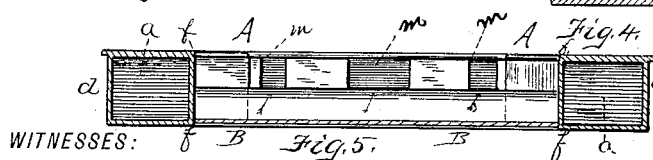
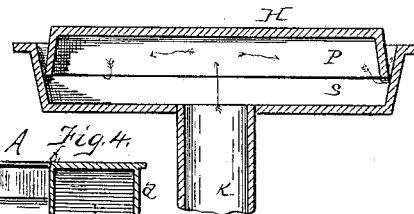
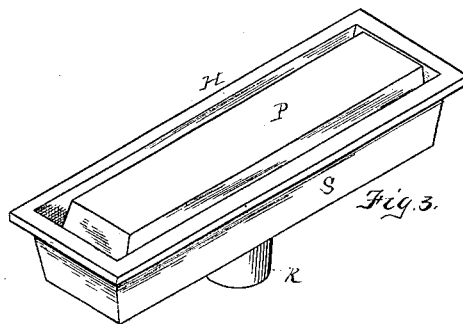
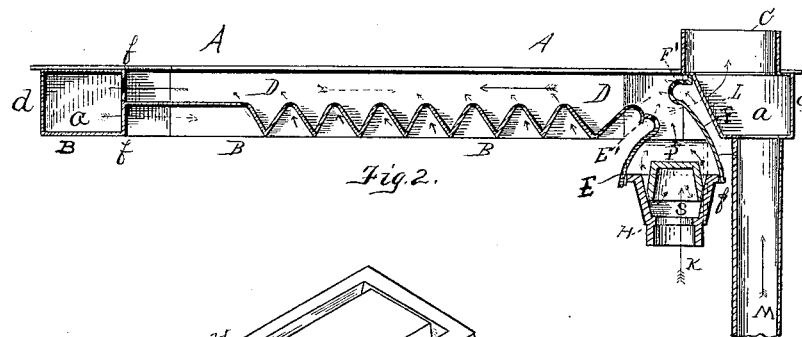
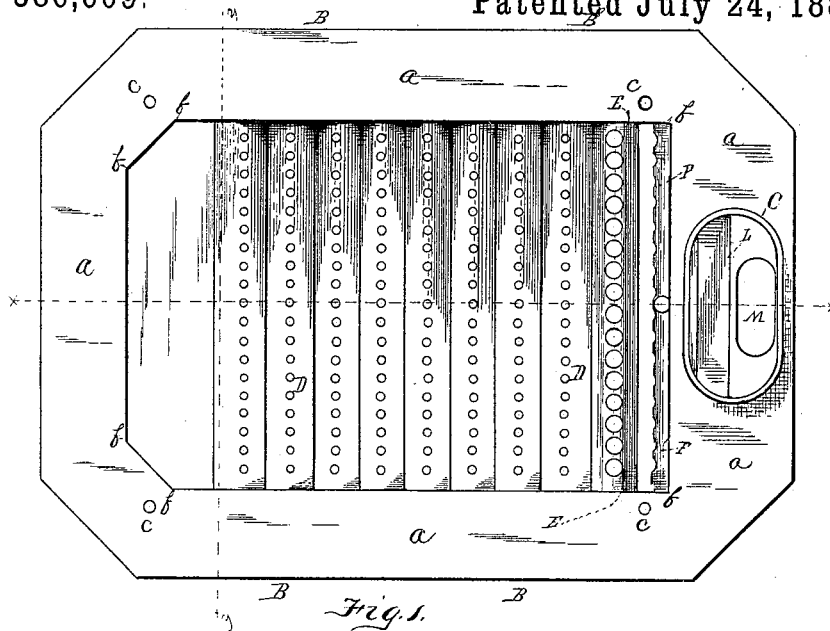
(No Model.)

J. J. H. SCHLAG.

GAS STOVE.

No. 386,609.

Patented July 24, 1888.



WITNESSES:
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UNITED STATES PATENT OFFICE.

J. J. HENRY SCHLAG, OF BENNETT, PENNSYLVANIA.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 386,609, dated July 24, 1889.

Application filed January 25, 1888. Serial No. 261,837. (No model.)

To all whom it may concern:

Be it known that I, J. J. HENRY SCHLAG, residing at Bennett, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered a certain new and useful Improvement in Gas-Stoves, of which improvement the following is a specification.

The purposes of my invention, generally stated, are to secure a thorough admixture of air and gas, a complete combustion of the gas, and consequently its economical use, the uniform distribution of the heat over the surface of the stove, and, finally, to avoid all danger of overheating the flues.

In the accompanying drawings, which constitute part of this specification, Figure 1 is a plan view of the interior of the stove with the upper casing removed. Fig. 2 is a cross-section of the stove on the line *xx* of Fig. 1. Fig. 3 is a perspective detail view of the burner; Fig. 4, a central longitudinal cross-section of the same; Fig. 5, a cross-section of the stove on line *yy* of Fig. 1, looking toward the front.

It has always been difficult in burning gas as a fuel to properly oxygenize the gas and then to thoroughly exhaust the caloric of the gas before it disappears up the chimney-flue. The unconsumed gas in the ordinary gas-burning device is objectionable for several reasons, chiefly because of its odor, also because of the extravagant use of fuel it indicates, and, lastly, because it escapes to the chimneys and, becoming ignited there, overheats the flues. I claim that these disadvantages are largely obviated in my stove.

I prefer to construct this stove in size about twenty inches by twenty inches and in depth two inches and of the general form shown in Fig. 1 of the drawings; but it is obvious that the spirit of the invention is not limited by any specific dimensions or contour. The top A and bottom B of the stove are cast and secured together by screws, the holes for which are indicated at *c c c c*, Fig. 1. The ends *d d*, Figs. 2 and 5, and sides are also cast. A flue, *a*, is made entirely around the stove between the upper and lower casings and the flue-strips *b b*, *b b*, &c. This flue communicates with the smoke-pipe C. Extending from one side flue to the other is a corrugated plate made of

cast-iron, D D. At the apex of the corrugations rows of perforations are made, as shown more clearly in Fig. 1. The back end, E, of the corrugated plate D D, in connection with the perforated plate F, which runs from one side flue to the other, forms a pair of air-burners, E' and F'. Upon these two plates E and F is hooked the burner H, the construction of which is more fully described below. The burner is connected with the gas-pipe K, which is provided with the usual jet and mixer, but not here shown. A plate, L, extending between the side flues, cuts off the smoke-pipe C from the fire-chamber of the stove.

Cold air is admitted to the smoke-pipe C by the cold-air flue M, extending to within a few inches of the floor. In Fig. 5 are shown three openings from the fire-chamber into the end flue at the front of the stove. These openings are marked, respectively, *m m m*, and are designed to spread the flame, that its influence may be uniformly felt over the surface of the stove.

The gas-burner H is cast in two parts, P and S, of such relative dimensions as to set one within the other, as shown in Figs. 3 and 4. If desired, the upper casting can be turned and set within the lower as one cup would set within another; but I prefer the position shown in the drawings. The lower edges of the sides and ends of the casting P are slightly cut away, so that it touches and rests upon the casting S only at its four corners, leaving a thin crack between the two castings all the way around. The shape and dimensions of these castings P and S can readily be varied by any mechanic; but their relative shape must be preserved to the extent that one can set within the other.

The operation of my stove and its advantages can now be readily seen.

The gas entering the burner H, as shown in Fig. 2, from the pipe K rises to the top of the burner; but not being able to escape at that point must return and find its exit at the base of the upper casting of the burner, where its sides have been slightly cut away, as before described. It is apparent that when the gas is lighted this retention of it in the burner will tend to heat and expand it before it passes between the air-burners E' and F'. The air coming through the perforations of these air-

burners will mingle with the gas in the flame and insure a hot and steady flame. The air-burners themselves will become somewhat heated and contribute to the general result. The
5 air, too, which is supplied to the burner will be somewhat heated by its passage over the hot iron of E and F. The unconsumed gas and products of combustion will then pass over the corrugated plate D D and be oxygenized
10 by the air rushing through the perforations in the top of the plate. I find that this plate D D takes up about all the gas that passes the air-burners E' and F', and further fulfills an important function in creating a flame beneath
15 the entire top of the stove, instead of only at one point, as in most other devices. At the front of the plate D D, I omit the corrugations and perforations, as I think it advisable to confine the flame to rear and center of the stove
20 rather than have it burn very near the flues. After leaving the plate D D the products of combustion pass into the end flue *a* through the three ports *m m m*. I find it preferable to use a number of ports here rather than one,
25 as the heat will be diffused more evenly in this way. The products of combustion then pass through the side flues *a a* back to the smoke-pipe C, by which time the caloric has nearly all been taken up by the stove. To further
30 insure the safety of the flues in the chimney, I introduce a draft of cold air into the smoke-pipe C through the flue M, as heretofore indicated.

By putting both the burner and the smoke-pipe at the back of the stove I compel the products of combustion to pass all around the
35 stove before escaping by the chimney. Other positions might be chosen for the burner and smoke pipe which would accomplish the same purpose; but I find that my selection is the
40 most economical of room. It is clear that the air-burner E' may either be cast solid with the plate D D or form a separate casting.

The skirting of the stove may be made as fancy dictates. The feet also and general design of the top, bottom, and sides may be modified as desired. Other burners may be substituted for mine; but I believe the burner H is preferable.

Having fully described my invention, I claim—

In a gas-stove, the combination of the burner H, the air-burners E' E' and F' F' on either side of said burner H, the perforated corrugated plate D D, extending from the rear to the front
5 of the fire-chamber, and the flues *a a a*, encircling said chamber and communicating therewith by the ports *m m m*, the whole structure being suitably incased.

In testimony whereof I have hereunto set my hand.

J. J. HENRY SCHLAG.

Witnesses:

W. L. PIERCE,
L. H. MATHEWS.