(No Model.) 2 Sheets—Sheet 1.

W. B. O'CONNOR.

ODORLESS GAS STOVE.

No. 459,111. Patented Sept. 8, 1891.

Fig. 1.

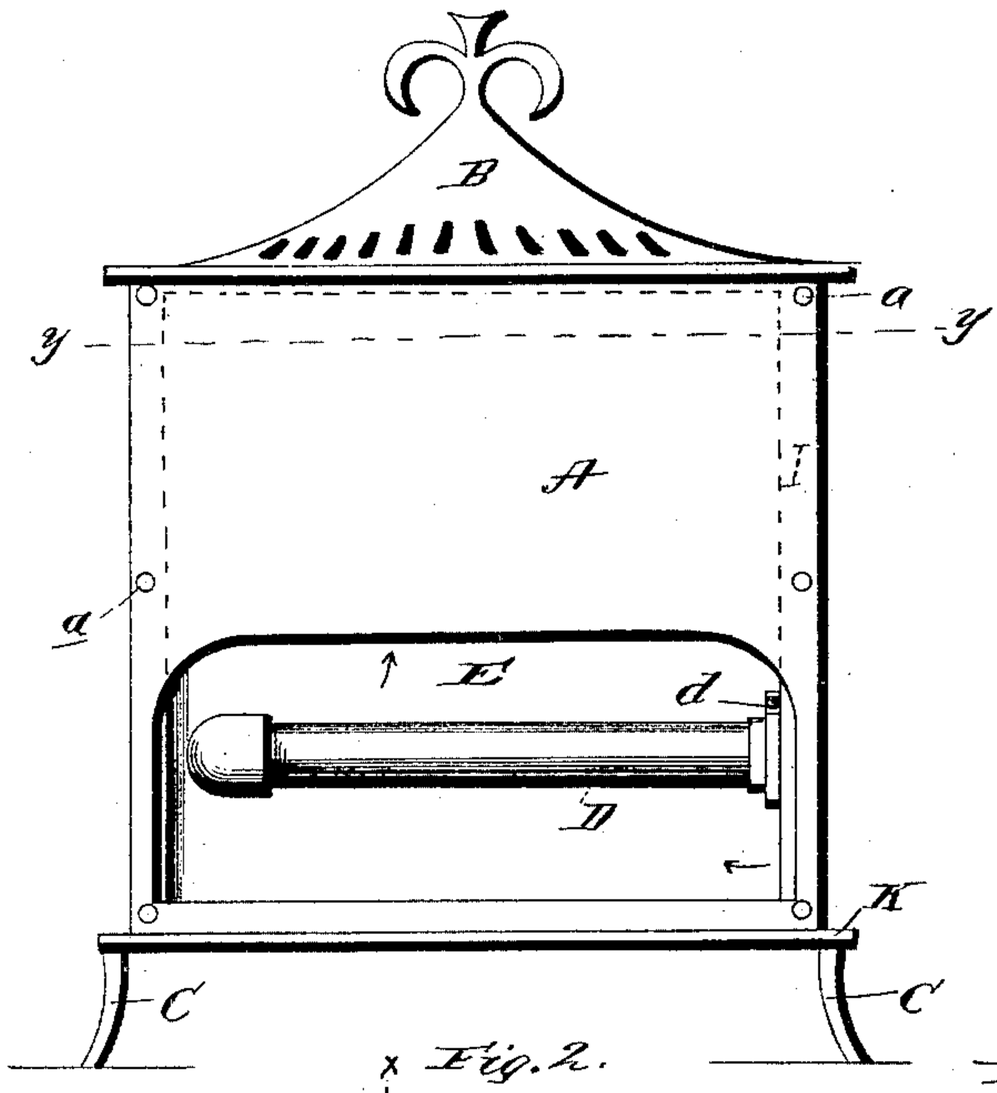
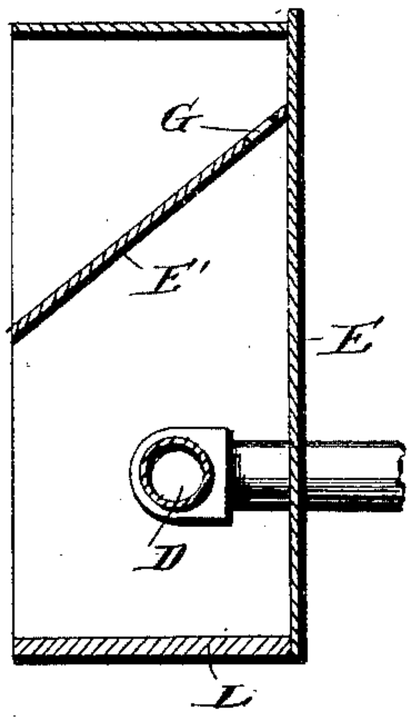


Fig. 4.



x Fig. 2. x

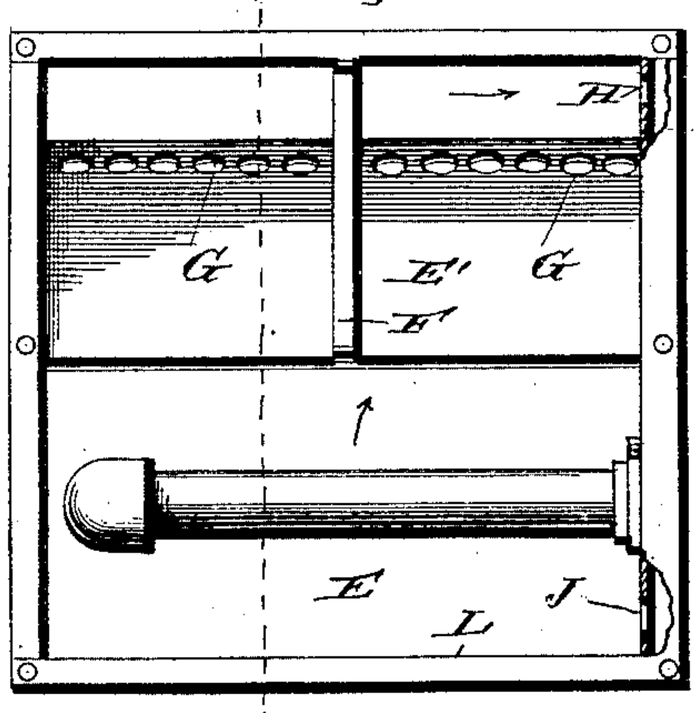


Fig. 3.

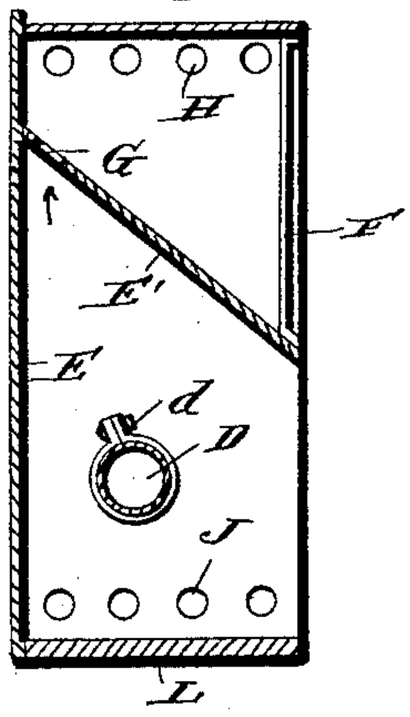
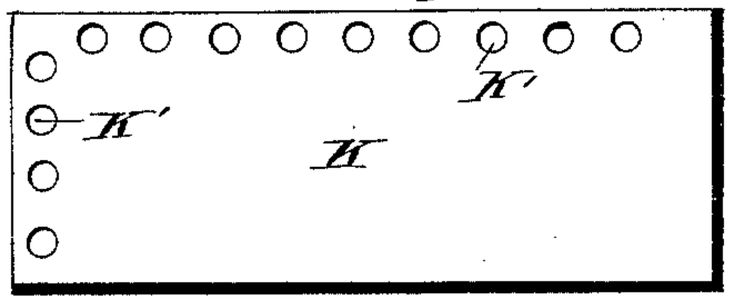


Fig. 5.



Witnesses:
C. A. Snider.
H. F. Matthews.

Inventor
Wm. B. O'Connor.
J. W. Webster
by James J. Sheehy
Asso. Attorneys

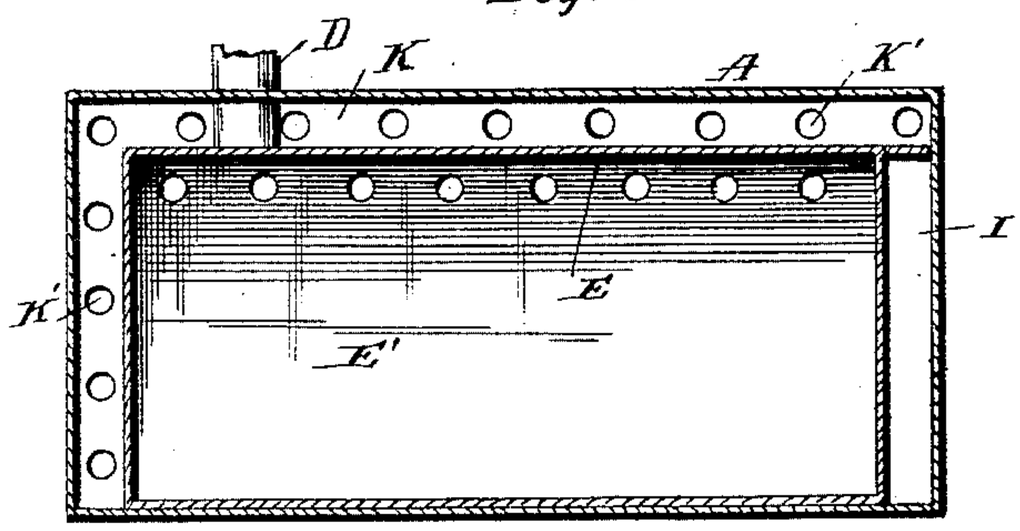
(No Model.) 2 Sheets—Sheet 2.

W. B. O'CONNOR.

ODORLESS GAS STOVE.

No. 459,111. Patented Sept. 8, 1891.

Fig. 6



Witnesses:
C. H. Raeder
Thomas E. Turpin

Inventor
Wm. B. O'Connor
Joshua B Webster Attorney
James J Sheehy & Asso. Attorney

UNITED STATES PATENT OFFICE.

WILLIAM B. O'CONNOR, OF STOCKTON, CALIFORNIA.

ODORLESS GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 459,111, dated September 8, 1891.

Application filed December 22, 1890. Serial No. 375,469. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. O'CONNOR, a citizen of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Odorless Gas-Stoves; and I do 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, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to gas-stoves for the purpose of utilizing either natural or artificial gas for heating purposes, so as to insure thorough combustion, and thus prevent the odor and expense that would be the result of the escape of unconsumed gas; and it consists in a novel flame-box or fire-place, and in such other devices as will be described in the specification, and pointed out in the claims.

To more properly explain my invention, reference is had to the accompanying drawings, forming a part of the specification, in which—

Figure 1 is a front elevation of my improved odorless gas-stove. Fig. 2 is a front elevation of the flame-box removed from the shell or drum. Fig. 3 is a vertical transverse section taken in the plane indicated by the line *x x* on Fig. 2, looking from the left-hand side of said plane line toward the right-hand side of the stove. Fig. 4 is a similar view taken in the same plane, but looking from the right-hand side of the plane line toward the left-hand side of the stove. Fig. 5 is a plan of the bottom of the shell or drum. Fig. 6 is a horizontal section taken in the plane indicated by the line *y y* on Fig. 1.

Similar letters of reference indicate corresponding parts.

The shell or drum A, preferably of heavy Russia sheet-iron, is provided with a bottom K and is suitably mounted on legs C, and at its apex is provided with a perforated cover B. Inside the shell A is the heating portion or stove proper, consisting of the bottom L, a back E, and suitable sides and top, the whole forming a fire-box or stove of such dimensions that when inserted inside the drum A a suitable space will be afforded between one side and the top of the stove and one side and the top of the shell to serve the purposes hereinafter described. The stove is held securely in position by screws *a* to the inside of the face of the shell A. The lower part of the face of the shell A is open, so as to expose the combustion-chamber or flame-box of the stove. A short distance back of this opening is located a horizontal burner D, consisting of a suitably-perforated section of gas-pipe secured to the wall of the combustion-chamber.

A short distance beneath the top of the combustion-chamber and above the burner D is secured a sheet of metal E′, set obliquely to the bottom L and provided with holes G. Above the sheet E′ and in the side of the combustion-chamber are holes H, which open into a return-flue I. Near the bottom of the return-flue I are holes J, which open into the lower part of the combustion-chamber just below the burner D. Between such side of the shell A as may be desired and the side of the stove proper, and between the back E of the stove and the back of the shell A, is a space forming a hot-air passage or chamber. The bottom K of the shell around its edges is provided with holes K′.

The gas to be consumed is admitted into the burner D in the usual manner from a connected main. A current of air constantly enters the combustion-chamber and forces the products of combustion and the unconsumed gas, if any, upward until it passes through the outlets G, thence to and through the outlets H into the return-flue I, thence being forced downward to and through the outlets J, it again comes in contact with the flame, and repeats the same process, as above described, and is thus thoroughly consumed, there being practically no waste of gas and no odor, as none of the burnt air or products of combustion can escape from the stove. The air to be heated passes through the holes K′ in the bottom K into the hot-air passage back of and to one side of the stove proper and passes upward, being heated on such passage, and enters the room through the perforated top B. A vertical brace F is riveted to the foot of the oblique sheet E′ and to the top

of the combustion-chamber to insure proper rigidity.

Having thus described my invention, what I claim as new is—

1. In a gas-stove, the combination, with the shell A, provided with the bottom K and perforated cover B, of the stove proper within said shell and consisting of the bottom L, the back E, and suitable top and sides, the burner D, the oblique sheet E′, provided with the outlet-holes G, the return-flue I, having holes H at its top and holes J at its bottom, and the brace F, all substantially as shown.

2. An odorless gas-stove comprising a combustion-chamber, the oblique sheet or plate arranged in said chamber and provided with apertures adjacent to its upper edge, a suitable burner arranged beneath said oblique sheet or plate, and a return-flue for the particles of combustion opening into the chamber above the sheet or plate and also beneath the burner, substantially as and for the purpose described.

3. In a gas-stove, the combination, with an outer shell or casing provided with a perforated bottom and top, of a combustion-chamber and a burner arranged therein, said combustion-chamber being so arranged within the outer shell that vertical flues are afforded between the two, which flues open into the combustion-chamber above and below the chamber, substantially as and for the purpose described.

4. In a gas-stove, the combination, with an outer shell or casing having a perforated top and a bottom perforated as described, of a combustion-chamber so arranged within the outer shell as to afford vertical flues between the two, the oblique sheet or plate arranged in said chamber and provided with apertures adjacent to its upper edge, a burner arranged beneath said oblique sheet or plate, and a return-flue for the particles of combustion opening into the combustion-chamber above the sheet or plate and also beneath the burner, all adapted to operate substantially as specified.

5. An odorless gas-stove comprising an outer shell or casing, a combustion-chamber so arranged within the outer shell that vertical flues will be afforded between the two, a burner arranged in the combustion-chamber, and apertures communicating with the combustion-chamber, and the vertical flues above and below the burner, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM B. O'CONNOR.

Witnesses:

JOSHUA B. WEBSTER,

JAMES T. SUMMERVILLE.