

(No Model.)

W. MOORE.

GAS STOVE.

No. 385,277.

Patented June 26, 1888.

Fig. 3.

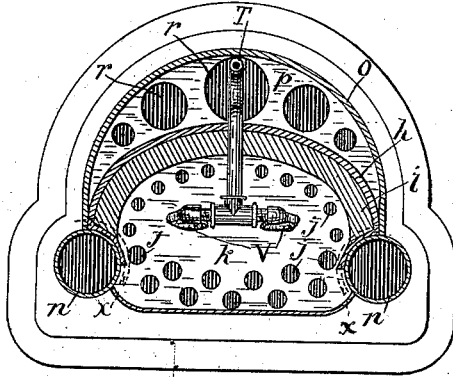


Fig. 4.

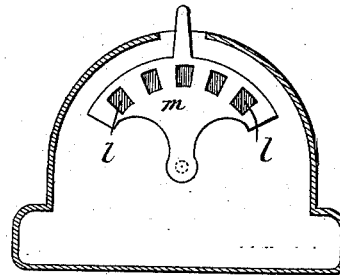


Fig. 1.

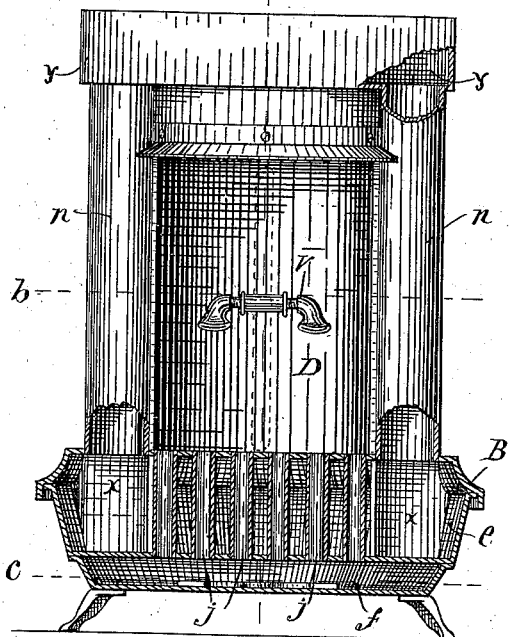
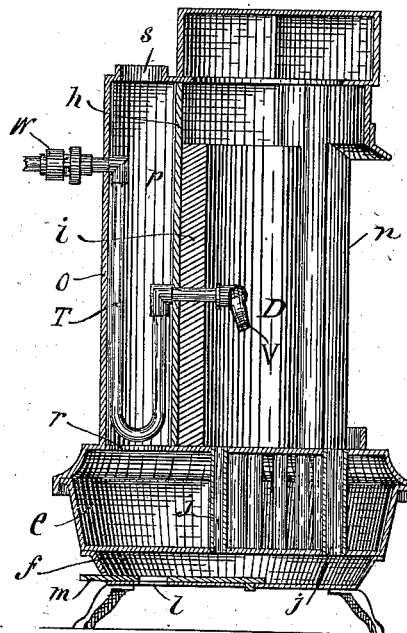


Fig. 2.



Witnesses.
A. M. Hood.
T. M. Hood.

Inventor.
William Moore

UNITED STATES PATENT OFFICE.

WILLIAM MOORE, OF KOKOMO, INDIANA.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 385,277, dated June 26, 1888.

Application filed January 31, 1888. Serial No. 362,553. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MOORE, a citizen of the United States, residing at Kokomo, in the county of Howard and State of Indiana, have invented a new and useful Improvement in Gas-Stoves, of which the following is a specification.

My invention relates to an improved heating-stove wherein it is designed to use gas, particularly natural gas, for fuel.

The objects of my improvement are, first, to provide means for heating the gas before it reaches the burner; second, to provide means for supplying the combustion-chamber with a series of currents of heated air, and, third, to so arrange the burner or burners and the tubes supplying hot air to the combustion-chamber that the currents of hot air and of gas shall enter the chamber in opposite directions, the gas being discharged from the burner downward within a surrounding series of ascending hot-air currents, whereby a complete and brilliant combustion of the gas is effected, all as hereinafter fully described.

The accompanying drawings illustrate my invention.

Figure 1 is a front elevation having the base shown in section. Fig. 2 is a vertical section at *a*. Fig. 3 is a transverse section at *b*. Fig. 4 is a transverse section at *c*.

The base *B* is hollow, and is divided by a horizontal partition, *d*, into two separate compartments, *e* and *f*.

D is the combustion-chamber, the rear wall, *h*, of which is preferably elliptical and provided with a lining of fire-brick, *i*. Compartment *f* of the base communicates with the combustion-chamber through a series of vertical tubes, *j j*, which pass through compartment *e*, and are arranged to discharge near the walls of the combustion-chamber, so as to surround a central unoccupied space, *k*, in the bottom of the chamber.

The bottom of compartment *f* is provided near the back side with a series of openings, *l l*, which may be partially or wholly closed by means of a slide, *m*. In the upper part of the combustion-chamber lateral extensions thereof are formed on each side, as at *y y*, Fig. 1.

Communication is established between the

upper compartment, *e*, of the base and the upper parts, *y y*, of the combustion-chamber by means of two hollow columns, *n n*, arranged one on each side of the open front of the combustion-chamber. Said hollow columns form flues which conduct the products of combustion from the upper part of chamber *D* to compartment *e* of the base. Within compartment *e*, below the columns *n*, deflecting-partitions *x x* (shown in dotted lines, Fig. 3) are arranged to cut off direct communication between the columns and the back of the compartment. Outside of the rear wall, *h*, of the combustion-chamber is a second wall, *o*, which forms the back side of the stove.

Between walls *h* and *o* is a semi-annular space, *p*, which communicates with compartment *e* through openings *r r* at the bottom, and with the chimney-flue through an opening, *s*, at the top.

T is the gas-supply pipe, which enters the back wall and passes downward and thence upward to about one-half the height of the combustion-chamber before passing through the rear wall of the chamber, the purpose being to expose a considerable extent of pipe to the action of the heated products of combustion as they pass up the space *p*.

V is the gas-burner, which may be of any well-known form adapted to throw one or more thin-spreading jets of gas downward and slightly outward in about the center of the space above the tubes *j*.

W is the air-mixer commonly used with natural-gas burners.

The operation of my device is as follows: The gas, having been turned on and lighted at the burners, burns at first with a comparatively dull flame. The flame being first projected downward, then rises and envelops the burner, thus rapidly heating it and the gas contained therein. The products of combustion and heated air from the combustion-chamber rise to the upper part of the chamber and pass from thence downward to compartment *e* of the base, where, being thrown first forward by the deflectors *x x*, they then pass backward around and between the tubes *j* to the back part of the compartment, from which they rise through the openings *r r* to the annular space *p* and out through the open-

ing *s* to the flue. The gas in the supply-pipe *T* is thus heated before reaching the burner. Tubes *j j* and the air contained therein becoming heated by the circulation about them of the products of combustion, a series of currents of hot air are set in motion, which, passing upward from the lower compartment, *f*, of the base through tubes *j*, surround and are projected against the gas-jet in the combustion-chamber, thus causing a perfect and rapid commingling of the heated gas and heated air. The whole interior of the combustion-chamber is thus filled with an intensely hot and brilliant flame. The lower compartment, *f*, of the base not only serves as a reservoir, in which the air taken from the room through the openings *l l* may be regulated as to quantity and becomes slightly heated by its passage along the bottom of compartment *e*, but it serves also to protect the floor of the room, beneath the stove, from overheating.

By the use of my improvement a great saving in gas is effected, and a much more satisfactory heat is obtained than in the old methods in burning natural gas of obtaining an incandescent radiating-surface by filling the fire-pot above the burner with fragments of fire-brick or other refractory material.

I claim as my invention—

1. In a heating-stove, the combination of the following elements, namely: a combustion-chamber, a hollow base arranged beneath the combustion-chamber and forming a part of the passage for the escape of products of combustion from said chamber, flues connecting the upper part of the combustion-chamber with said hollow base, said hollow base being provided with openings which communicate with an exit-flue, a gas-burner arranged within the combustion-chamber with

its discharge-opening downward, and a series of tubes arranged beneath said burner and passing through the hollow base, whereby communication is established between the exterior air beneath the base and the interior of the combustion-chamber and the gas-jet is projected against and surrounded by a series of ascending hot-air currents, substantially as specified.

2. In a heating-stove, the combination, with the combustion-chamber, the flues *n n*, the compartment *e* in the hollow base, having openings *r* and forming a part of the passage for the escape of the products of combustion from said chamber, the exit-flue communicating with said openings *r*, and the series of tubes arranged beneath said burner and passing through the compartment *e*, of the compartment *f*, arranged beneath said compartment *e* and having openings *l*, all arranged to co-operate substantially as and for the purpose specified.

3. In a heating-stove, the combustion-chamber *D*, having lateral extensions *y y*, base *B*, having compartment *e*, provided with openings *r*, and compartment *f*, provided with openings *l*, hollow columns *n n*, tubes *j*, walls *h* and *o*, having space *p* between them, said space having an opening *s*, and forming a passage for the escape of the products of combustion, and the gas-supply pipe arranged in said space *p*, and having a burner attached within the combustion-chamber, all combined and arranged to co-operate substantially as and for the purpose specified.

WILLIAM MOORE.

Witnesses:

H. P. HOOD,
A. M. HOOD.