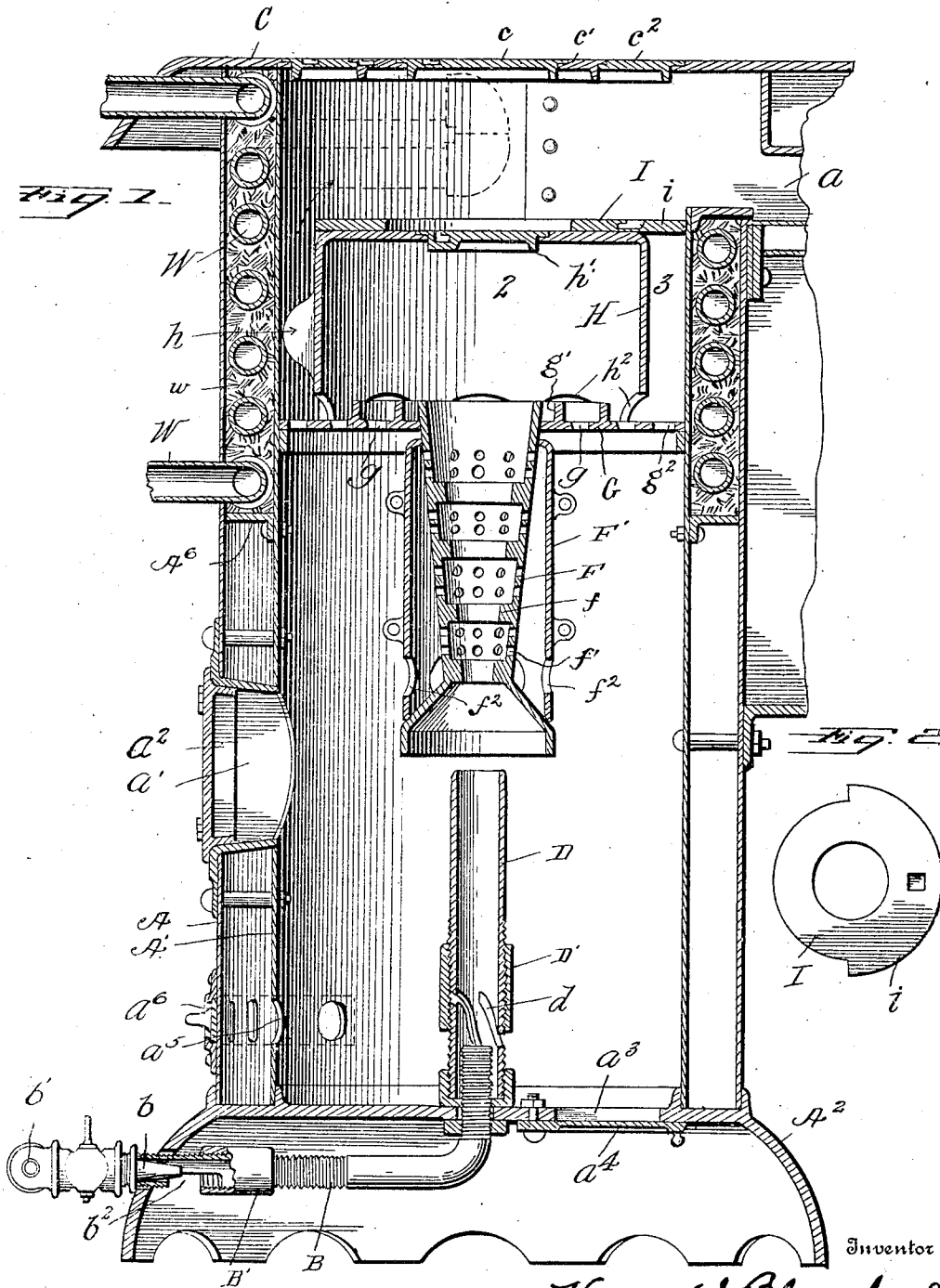


No. 849,315.

PATENTED APR. 2, 1907.

V. W. BLANCHARD.
GAS COOKING STOVE.
APPLICATION FILED JAN. 22, 1906.



Witnesses
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VIRGIL W. BLANCHARD, OF NEW YORK, N. Y.

GAS COOKING-STOVE.

No. 849,315.

Specification of Letters Patent.

Patented April 2, 1907.

Application filed January 22, 1906. Serial No. 297,250.

To all whom it may concern:

Be it known that I, VIRGIL W. BLANCHARD, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gas Cooking-Stoves; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification.

This invention is an improved gas cooking-stove especially adapted for domestic purposes, and its object is to provide a stove wherein a great heat can be produced with a very little expenditure of gas; and to this end the invention embodies a novel construction of the stove-casing, a novel arrangement of the gas-burning apparatus therein, a novel heat detaining and radiating combustion-chamber within the stove, and novel means for regulating the flow of the products of combustion in this stove, and various combinations of such parts, as are hereinafter described and claimed.

The accompanying drawing illustrates a vertical central section through a complete stove embodying the invention.

The body of the stove may be composed of inner and outer cylindrical walls A A', supported at bottom on the base-casting A², of any suitable form and connected together at intermediate points by any suitable means. The space between the cylinders A A' forms a non-conducting dead-air space, which space, however, may be filled, if desired, with any suitable non-conducting packing, such as asbestos. In the upper part of this space a water-heating coil is placed, hereinafter referred to.

The top of the stove is closed by a plate C, in which a set of griddle-plates c c' c² can be arranged, as indicated in the drawing, to accommodate various cooking utensils. The outlet for the heating products of combustion is formed at the upper end and at one side of the casing, as shown at a.

Under the base A² is arranged an air and gas mixing-tube B, into which gas is admitted through a jet-head b, connected with a pipe b', and air can be admitted to the pipe B through an opening b², regulable by the sleeve B'. The inner end of the pipe B extends upwardly through the top of the base A² and is connected to the lower end of the secondary mixing-tube D, which is provided with inlet-slots d for the admission of air regu-

lable by a sleeve D'. These parts are preferably constructed as described in my application, Serial No. 297,236, filed January 22, 1906.

The mixing-tube D discharges into the lower end of a burner F, provided with interior constrictions f and lateral perforations f' in its walls for the admission of jets of air into the ascending current of burning gases. The burner is preferably surrounded by a jacket F', so as to insure high heating of the air admitted through the jets f'.

The jacket F' is provided near its lower end with a series of openings f², through which air is admitted to the air-chamber around the burner.

The burner is preferably constructed as described in my application for gas-burner, Serial No. 297,240, filed January 22, 1906, and is suspended from a plate G, supported within the casing and forming a transverse partition therein, this plate being provided with apertures g for the admission of air above the plate, and has on its upper side annular rings or ribs g' for the purpose of trapping any unconsumed products of combustion which may escape above the burner into a secondary combustion-chamber 2, formed within an inverted-cup-shaped casting H, placed over the outlet of the burner and resting upon the plate G. This plate H is centered within the stove by means of lateral projecting ears h. A griddle-plate h' may be placed in the top of the chamber 2, if desired.

The heated products of combustion entering chamber 2 heat the walls thereof intensely and maintain the top thereof at a bright red heat analogous in effect to the presence of an incandescent coal fire, all portions of the burner-plate G becoming heated, so that there is a violent uprush of air produced in the stove, which air becomes also highly heated and is supplied to the burner through the perforations f' and to the chamber 2 through the perforations g, and also passes through perforations g² in plate G into the ascending flue 3 between the walls of the casting H and the stove-casing.

The chamber 2 communicates with the flues 3 by means of apertures h² in the lower edges of the walls of casting H, so that the gases are trapped in chamber 2, and to escape must descend toward the plate G, where they meet inrushing jets of fresh air, and passing out into the flues 3 meet further jets of air rising through the apertures g². Thus the

gases are thoroughly oxidized, and the interior of the stove and parts therein are raised to a very high temperature, so that the top griddles are heated both by direct impact of the hot gases thereagainst and by radiation from the top of chamber 2.

The outlet a is preferably arranged somewhat below the top plate C , so that the hottest gases will be trapped in the top of the stove and compelled to dive toward the outlet a , thus preventing rapid loss of heat by direct outflow of gases. Preferably I place an annular valve-plate I on top of casting H , which plate is provided with a flange i , that projects over and practically closes the underlying portion of the flues 3. This plate can be adjusted rotatorily on casting H , so as to close any part of the flue 3 which it may be desired to do. It is shown adjusted to prevent direct flow of the gases from flue 3 into outlet a .

Access can be had to the burner for lighting the same through an opening in the wall of the stove surrounded by a collar-casting a' and closed by a door a^2 . Access can be had to the sleeve D' through an opening a^3 in the base A^2 , closable by a valve a^4 . The proper quantity of air to support combustion in the stove is admitted through apertures a^5 in the lower portion of the stove regulable by a valve a^6 .

The upper portion of the stove surrounding the burner and combustion-chambers may be utilized as a water-heater, and for this purpose I have shown a coil W arranged in the walls thereof between the inner and outer casing $A A'$ and supported on a shelf A^6 between the casings. Preferably this coil is surrounded by packing w , of powdered fire-brick, so that loss of heat by radiation will be practically prevented, and at the same time the heat absorbed in the walls will be utilized to heat the water. I do not, however, in this application claim the water-heating coil.

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

1. In a gas cooking-stove, the combination of the base, the casing thereon, a transverse partition in said casing perforated for the passage of air, a burner below and suspended from the partition, and laterally perforated for the admission of air, means for admitting mixtures of air and gas into the lower end of said burner, and an inverted-cup-shaped casting resting upon said partition over the mouth of the burner.

2. In a gas cooking-stove, the combination of the casing, a transverse partition therein perforated for the passage of air, a burner suspended from said partition and laterally perforated for the passage of air, means for admitting mixtures of air and gas into the lower end of said burner, and an

inverted-cup-shaped casting resting upon said partition above the mouth of the burner and having gas-outlets around its lower edges, and a flue for the burnt gases around and above said casting.

3. In a gas cooking-stove, the combination of the casing, a burner, means for admitting mixtures of air and gas into said burner, an inverted-cup-shaped casting in said casing above the mouth of the burner, and a valve on said casting partly closing the flue-space between the walls of said casting and the casing.

4. In a gas cooking-stove, the combination of the base, the casing thereon, a transverse partition in said casing perforated for the passage of air, a burner suspended from said casing, means for admitting mixtures of air and gas to the lower end of said burner, an inverted-cup-shaped casting supported on said partition above the mouth of the burner, an outlet above said casting, and a valve on said casting partly closing the flue-space between the walls of said casting and the casing.

5. In a gas heating-stove, the combination of a cylindrical casing, a base supporting the same, a top plate closing the case, an outlet below the top plate, a transversely-arranged partition within the casing below the outlet perforated for the passage of air, a burner below the partition provided with perforations in its side for the admission of air, and a mixing-tube within the casing discharging into the burner.

6. In a gas heating-stove, the combination of a cylindrical casing, a base supporting the same, a top plate closing the case, an outlet in the side of the casing below the top plate, a transversely-arranged partition within the casing below the outlet perforated for the passage of air, a burner suspended from said partition and provided with perforations in its side for the admission of air, and a mixing-tube within the casing discharging into the burner.

7. In a gas heating-stove, the combination of a cylindrical casing, a base supporting the same, a top plate closing the case, an outlet below the top plate, a transversely-arranged partition within the casing perforated for the passage of air, a burner below the partition and discharging above the same and provided with perforations in its side for the admission of air, and a mixing-tube within the casing discharging into the burner; with an inverted-cup-shaped casting mounted on said perforated plate above the burner, and of smaller diameter than the internal diameter of the stove, and a valve for regulating the admission of air into said stove below the burner.

8. In a gas heating-stove, the combination of a cylindrical casing, a base supporting the same, a top plate closing the case, an outlet

below the top plate, a transversely-arranged partition within the casing perforated for the passage of air, a burner suspended from said partition and provided with perforations in its side for the admission of air, and a mixing-tube within the casing discharging into the burner; with an inverted-cup-shaped casting mounted on said perforated plate above the burner, and a valve for regulating the admission of air into said stove below the burner.

9. In a gas-heating-stove, the combination of a base, a casing thereon comprising inner and outer cylindrical walls, valved openings for the admission of air into the lower portion of said casing, a perforated partition in said casing below the outlet, an inverted-cup-shaped casting supported on said partition, a tubular burner suspended from said partition, an air-heating jacket surrounding said burner and provided with air-inlets, and a gas and air mixing tube discharging into the lower end of said burner.

10. In a gas heating-stove, the combination of the casing, having inner and outer cylindrical walls, valved openings for the admission of air into the lower portion of said casing, a perforated partition in said casing below the outlet, an inverted-cup-shaped casting supported on said partition, a tubular burner provided with constrictions and perforations and suspended from said partition, and a gas and air mixing tube discharging into the lower end of said burner.

11. In a cooking-stove, the combination of a base, inner and outer cylinders thereon constituting a casing, a top plate closing the up-

per end of said casing, an outlet below the top plate, a transversely-arranged perforated metal plate supported in the casing below the outlet, an inverted-cup-shaped casting supported on said plate and forming an annular flue exterior thereto in said casing, a tubular burner provided with perforations for the admission of air in its sides, a gas and air mixing tube in the lower part of the stove discharging into said burner, and means for supplying a mixture of gas and air to said tube, and a valved air-inlet opening in the lower part of the stove.

12. In a cooking-stove, the combination of a base, the inner and outer cylinders thereon constituting a casing, a top plate closing the upper end of said casing, an outlet below the top plate, valved air-inlet openings in the lower part of the stove and valves regulating said opening, and a transversely-arranged perforated metal plate supported in the casing below the outlet; with an inverted-cup-shaped casting supported on said plate, a tubular burner suspended from said perforated plate and provided with perforations for the admission of air in its sides, a gas and air mixing tube in the lower part of the stove discharging into said burner, and means for supplying a mixture of gas and air to said tube.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

VIRGIL W. BLANCHARD.

In presence of—

JAMES R. MANSFIELD,
L. E. WITHAM.