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R. A. MAY.

GAS OR SOLID FUEL FURNACE.

APPLICATION FILED AUG. 13, 1903.

NO MODEL.

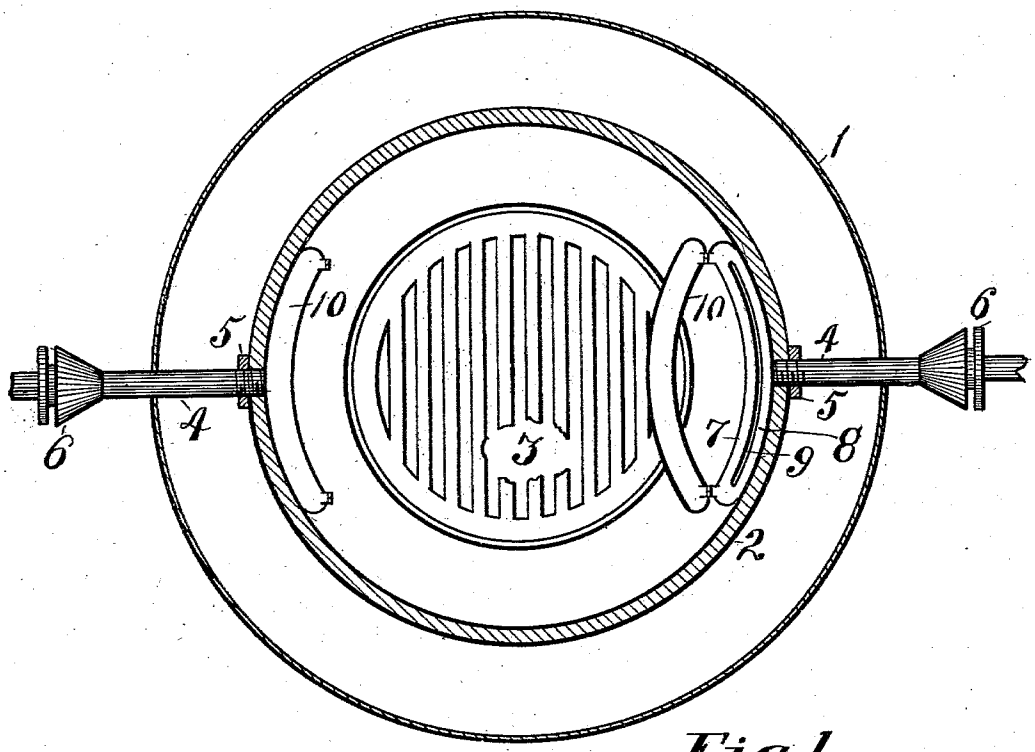

Fig. 1.

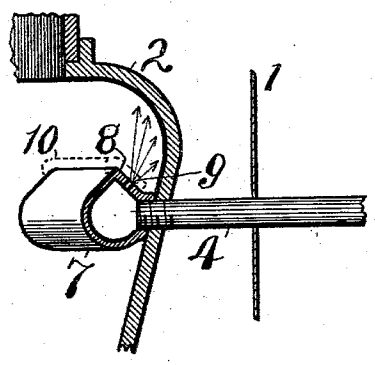

Fig. 2.

Witnesses:
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No. 752,461. Patented February 16, 1904.

UNITED STATES PATENT OFFICE.

RUDOLPH A. MAY, OF AKRON, OHIO.

GAS OR SOLID FUEL FURNACE.

SPECIFICATION forming part of Letters Patent No. 752,461, dated February 16, 1904.

Application filed August 13, 1903. Serial No. 169,409. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH A. MAY, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Gas or Solid Fuel Furnaces, of which the following is a complete specification.

My invention has relation to improvements in stoves, furnaces, and other combustion devices for the successful burning of either solid or fluid fuel.

The objects of my invention are to provide a stove, furnace, or other combustion device which is readily applicable for use in those communities where natural gas is a common fuel and one in which a solid fuel may be used or substituted upon a failure for any cause of the fluid fuel.

Another object of my invention is to provide devices for the ready and successful handling and controlling of the fluid fuel, whereby the flame thereof may be thrown against the surface of the fire-pot or combustion-chamber with a view to communicating more heat thereto than if the flame was thrown into the center and to secure greater radiation of heat from the fire-pot or combustion-chamber to the external air in the case of a stove and in the case of a furnace to the air inclosed by the casing.

A further object is to provide means whereby the dust incident to the combustion of a solid fuel may be prevented from clogging the burner used for the fluid fuel and at the same time to provide such cover for the fluid-fuel burner that it will in no wise impede the use of the burner for fluid fuel.

To the accomplishment of the aforesaid objects, my invention consists in the peculiar and novel construction, arrangement, and combination of parts hereinafter described, reference being had to the accompanying drawings, forming a part of this specification.

In the accompanying drawings, in which similar reference-numerals indicate like parts in the different figures, Figure 1 is a section of a furnace which is here used to illustrate the application of my invention immediately above the burners used for fluid fuel, and Fig. 2 a vertical section through the center of the inlet of fluid fuel.

In the drawings, 1 represents the shell or outer casing of a furnace, which is designed to inclose the heated air arising around the stove or furnace proper and which is afterward conveyed by suitable pipes to the apartments to be heated. Centrally within this casing is the fire-pot 2, provided at the bottom with a grate 3, upon which is burned solid fuel. The construction of the furnace so far described may be of any description wherein a solid fuel may be burned. Passing through the sides of the casing 1 and the fire-pot 2 are inlets or pipes 4, provided with gaskets or washers 5 where they enter the fire-pot, with a view to preventing the products of combustion in the fire-pot or combustion-chamber from entering the air-space situated between the fire-pot and the casing 1. These inlet-pipes 4 are provided with mixers 6 and ordinary valves or cocks for the control of the supply of fluid fuel, but which are not deemed necessary to here describe or show, as they may be of any ordinary construction.

Attached to the inner end of the inlet-pipes 4 are burners 7, the general outline of which is substantially similar with the inner side of the fire-pot or combustion-chambers and are adapted to lie against the inner face thereof and conform thereto. These burners consist of a partially-cylindrical body having a slanting upper face 8, the slant of which is toward the inlet-pipes 4. In substantially the center of this inclined upper face is an opening 9, from which the fluid fuel flows.

The object of inclining this upper face of the burners 7 is to throw the flame of the fluid fuel against the inner side of the fire-pot or combustion-chamber, as indicated in Fig. 2 by arrows.

Whenever it is desired to burn solid fuel in the furnace or stove, it is necessary to cover the outlet 9 with a cover of some description, and I preferably hinge on the extreme ends of the burners 7 a cover 10, which is arranged when swung in one direction to completely

cover the entire upper face of the burner, as well as the outlet 9, to prevent the deposit of ashes and dust in the fluid-burner 7.

It is entirely within the scope of my invention to make this cover or lid 10 entirely separate from the burner 7 and capable of complete removal therefrom; but as the central space within the fire-pot is free at the time that the fluid-fuel burner is in operation the swinging of the hinged lids 10 into the main body of the fire-pot to uncover the outlets in the burners 7 in no wise interferes with the normal operation of the furnace or stove.

What I claim, and desire to secure by Letters Patent, is—

In a stove, furnace or other combustion device arranged to burn a solid or fluid fuel the combination of a burner arranged to lie along the inner face of a fire-pot or combustion-chamber provided with an outlet for a fluid fuel pointing substantially backward arranged to throw the flame of said fluid fuel against the inner face of said fire-pot or combustion-chamber and a cover to protect the outlet of said fluid fuel when not in use.

In testimony that I claim the above I hereunto set my hand in the presence of two subscribing witnesses.

RUDOLPH A. MAY.

In presence of—
C. E. HUMPHREY,
BESSIE CROOK.