March 20, 1928. 1,663,284

A. O. SLETAGER

OIL AND WATER BURNER STOVE

Filed April 15, 1927

Fig. 1.

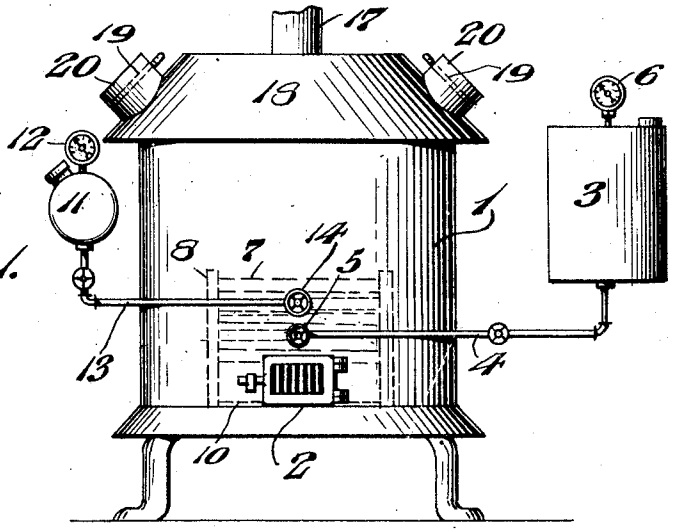


Fig. 2.

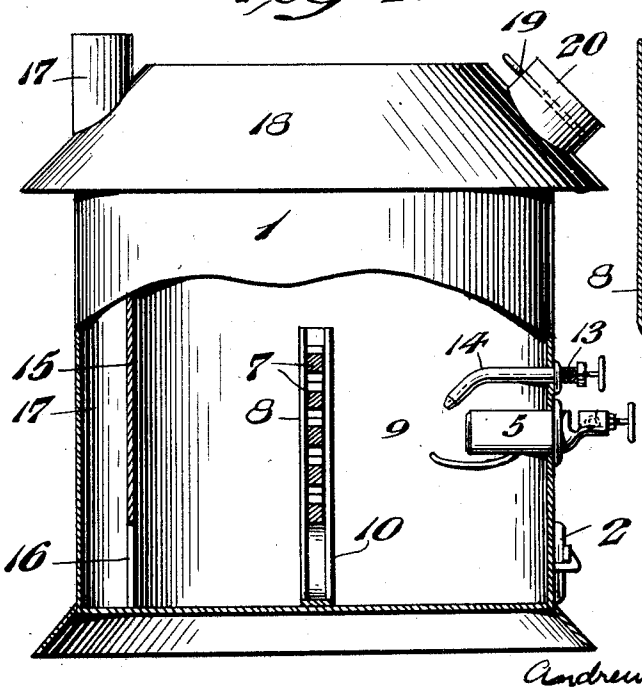
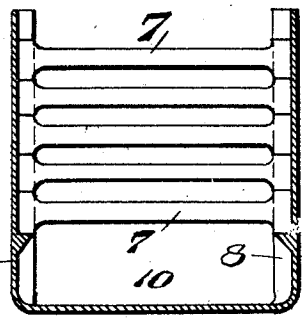


Fig. 3.



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UNITED STATES PATENT OFFICE.

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OIL AND WATER BURNER STOVE.

Application filed April 15, 1927. Serial No. 183,944.

It is the object of this invention to devise a novel construction of an oil and water burner stove in which water in desired quantities will be injected into the flame from the burner or torch and converted into steam, so that the heated air will have the desired amount of moisture and humidity to provide a healthy atmosphere in the room or rooms heated by the stove.

A further object of my invention is to devise a novel construction and arrangement of an oil and water stove wherein the commingled flame and water are injected against a grate or baffle located within the stove, and wherein the air for combustion is introduced near the bottom of the stove, the construction being such that the waste products of combustion pass through a flue at the rear of the stove to the stove pipe connected with the chimney.

With the above and other objects in view as will hereinafter appear, my invention comprehends a novel construction and arrangement of an oil and water burner stove.

It further comprehends a novel oil and water burner stove wherein provision is made for the introduction of water in minute quantities into the flame passing from the burner and impinging against a baffle or grid.

It further comprehends a novel oil and water stove having means to cause a commingling of steam with the products of combustion in the flame passing from the oil burner, and wherein the draft for combustion enters near the bottom of the combustion chamber, the combustion chamber being provided with exits through which the moistened and heated air can pass into the room to be heated. These exits have means to close them when desired so that only the heat radiating from the walls of the stove will pass into the room to be heated.

Other novel features of construction and advantage will hereinafter appear in the detailed description and the appended claims.

For the purpose of illustrating the invention, I have shown in the accompanying drawings a typical embodiment of it, which, in practice, will give satisfactory and reliable results. It is, however, to be understood that the various instrumentalities of which my invention consist can be variously arranged and organized and my invention is not limited to the exact arrangement and organization of these instrumentalities, as herein set forth.

Figure 1 is a front elevation of an oil and water burner stove, embodying my invention.

Figure 2 is a side elevation partly in section.

Figure 3 is a vertical section of the grate.

Similar numerals of reference indicate corresponding parts.

Referring to the drawings:—

1 designates the casing of an oil and water burner stove embodying my invention. The casing is provided near the floor with a door controlled opening 2 which controls the admission of air to promote combustion, the door being provided with the customary controllable air openings.

3 designates an oil tank of any desired or conventional type which is supported at any desired location within the place where the stove is located, and this tank is connected by means of a valve controlled oil conduit 4 with an oil burner or torch 5. The feed from the oil tank 3 may be by gravity or air pressure which latter may be introduced into the tank 3 in any desired manner, and if a pressure feed is employed, the oil tank is provided with an oil pressure gauge 6.

The burner or torch 5 may be of any desired or conventional construction, and the flame is projected therefrom into the combustion chamber of the stove. In the path of this flame I provide a baffle which extends a desired distance across the combustion chamber and is in the form of grate bars 7 that can be dropped into position through the top opening of the stove and be received in the vertical guides in the frame 8. The frame 8 is provided with an air opening 10 at its bottom portion, and the baffle is positioned in the combustion chamber 9 a desired distance from the burner 5.

11 designates a water tank having an air pressure gauge 12, and this tank 11 is provided with a conduit 13 which leads to a nozzle 14 of any desired or conventional type which is disposed within the casing 1 in proximity to the oil burner 5, and it is preferably located beneath this burner and is mounted in such a manner that the spray or minute particles of water ejected therefrom will be discharged into the flame passing from the burner 5 so that such particles

of water will be instantly turned into steam and serve to add moisture to the heated air.

The combustion chamber 7 is provided with a back wall 15 extending from the top of the stove to a desired distance from the bottom so as to form an opening 16 which communicates with a discharge passageway 17 which leads to the conventional stove pipe or chimney. The stove is provided at its top with any desired form of a cover 18 which is provided with openings 19, which if desired, can be closed by means of the valves 20 of any desired or conventional type.

In the operation of the stove the draft for combustion enters through the door controlled opening 2 and passes along the bottom of the combustion chamber 7 towards the exit opening 16. The oil may be fed from the oil tank 3 in any desired manner for example, by a gravity fed or by a pressure fed, a desired pressure being placed on the oil in the tank 3, and such pressure will be visibly indicated by the oil pressure gauge 6.

The oil passes from the oil tank 3 by means of the oil conduit 4 to the burner or torch 5 which can be of any conventional construction and regulated in the usual and well known manner, so that the amount of oil fed can be controlled as may be desired.

The flame from the burner 5 is projected forwardly to impinge against the grate 8. The water in the tank 11 may be under any desired pressure and may be fed by gravity or by pressure through the water conduit 13 to the nozzle 14, which latter may be of any desired or conventional type, in order that a desired or regulated amount of water will be atomized or injected into the products of combustion or flame passing from the burner 5. The result will be that the particles of water will be instantly converted into steam and the commingled steam and products of combustion will impinge against the baffle or grate 8. These commingled products of combustion, and the portions of cold air with which they commingle will pass upwardly to effect the heating of the stove and if the valves 20 are open, the moist heated air will be discharged into the room. If the valves 20 are in their closed position, then the heat will radiate into the room through the walls of the stove. The waste products of combustion and the excess of cold air will pass to the exit or outlet passageway 17, and then through the stove pipe to the chimney.

It will be apparent from the foregoing that in accordance with my present invention I have devised a novel construction and arrangement of a stove in which the water in minute quantities is injected into the flame from the burner so that it is instantly converted into steam, and if any of the water should pass beyond the flame it will strike the fire grate but will not do any damage as the water is in the form of a mist as it is atomized from its nozzle. This steam and hot air will escape through the openings in the top of the stove.

The cold air inlet and the exhaust flue will prevent the heat from escaping therethrough since the cold air is heavier than the hot air, and the cold air along the floor will be drawn into the stove and will pass to the exhaust flue and therefrom to the chimney. I thus am enabled to obtain a moist healthy heat which is devoid of gas fumes such as are present in the operation of gas and oil stoves as ordinarily constructed.

It will now be apparent that I have devised a new and useful oil and water burner stove which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in the present instance, shown and described a preferred embodiment thereof which will give in practice satisfactory and reliable results, it is to be understood that this embodiment is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

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

1. An oil and water burner stove, comprising a casing having a combustion chamber and provided with a controllable air inlet opening through its side wall at its bottom and having a rear wall having an opening at its bottom for the discharge of excess of cold air and the products of combustion and having an exit flue communicating with said discharge opening, and oil and water nozzles extending into said combustion chamber above said air inlet opening.

2. An oil and water burner stove, comprising a casing having a combustion chamber and provided with a controllable air inlet opening through its side wall at its bottom and having a rear wall having an opening at its bottom for the discharge of excess of cold air and the products of combustion and having an exit flue communicating with said discharge opening, oil and water nozzles extending into said combustion chamber above said air inlet opening, and controllable outlets from said combustion chamber.

3. An oil and water burner stove, comprising a casing having a combustion chamber and provided with a controllable air inlet opening through its side wall at its bottom and having a rear wall having an opening at its bottom for the discharge of excess

of cold air and the products of combustion and having an exit flue communicating with said discharge opening, oil and water nozzles extending into said combustion chamber above said air inlet opening, and a baffle in alignment with said opening and having an opening in its bottom portion to provide an unobstructed flow of cold air from the air inlet to the discharge opening.

4. An oil and water burner stove, comprising a casing having a combustion chamber and provided with a controllable air inlet opening through its side wall at its bottom and having a rear wall having an opening at its bottom for the discharge of excess cold air and the products of combustion and having an exit flue communicating with said discharge opening, oil and water nozzles extending into said combustion chamber above said air inlet opening, and a baffle in alignment with said opening and having an opening in its bottom portion to provide an unobstructed flow of cold air from the air inlet to the discharge opening, said baffle extending upwardly into the path of discharge from said nozzles.

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