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W. T. KELLEY & C. W. HOFMEISTER.

METHOD OF SUPPLYING FUEL FOR HEATING PURPOSES.

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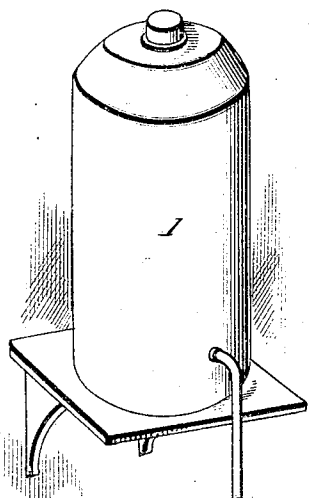


Fig. 1.

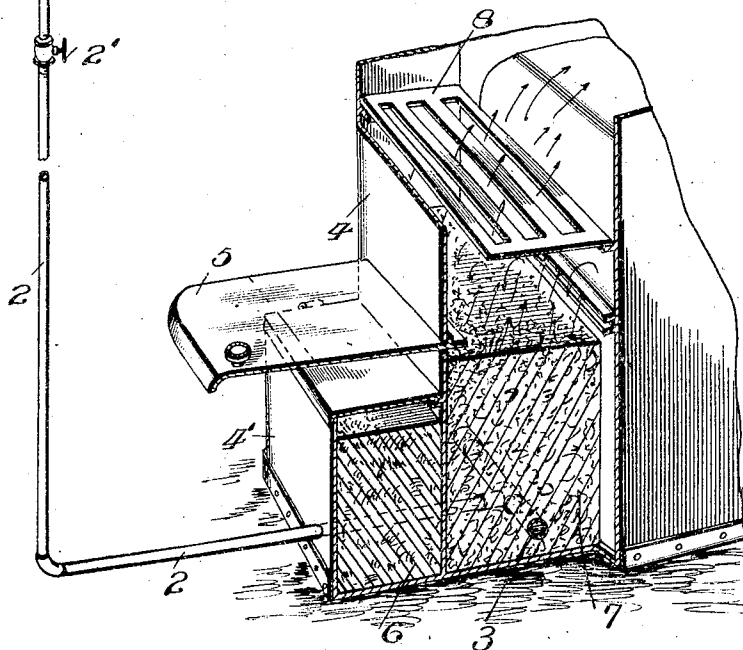
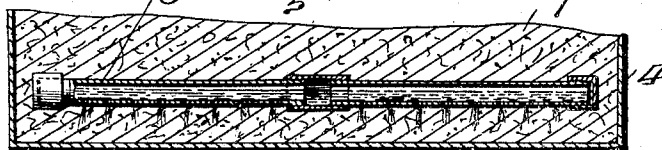


Fig. 2.



Inventors.

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UNITED STATES PATENT OFFICE.

WILLIAM THOMAS KELLEY AND CHRISTOPHER W. HOFMEISTER, OF MUSKOGEE, INDIAN TERRITORY, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO KELLEY PETROLEUM GAS GENERATOR COMPANY, A CORPORATION OF ARIZONA TERRITORY.

METHOD OF SUPPLYING FUEL FOR HEATING PURPOSES.

No. 865,646.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed October 26, 1904. Serial No. 230,123.

To all whom it may concern:

Be it known that we, WILLIAM THOMAS KELLEY and CHRISTOPHER W. HOFMEISTER, citizens of the United States, residing at Muskogee, in the Creek Nation, Indian Territory, have invented new and useful Improvements in Methods of Supplying Fuel for Heating Purposes, of which the following is a specification.

This invention relates to an improved method of supplying fuel for heating purposes in stoves, burners, engines, steam boilers and in fact in all places where a cheap and economical source of heat supply is desired.

Furthermore it is contemplated by this invention to provide a simple yet practicable and efficient method of employing crude petroleum or oil as a substitute for ordinary fuel, such as coal and wood.

In carrying out the present method an absorbent material of any suitable nature such as cinders, wood ashes, or other refuse material is combined with the crude petroleum, the latter being fed thereto and diffusing itself throughout the absorbent as will be more particularly set forth in the following description and illustrated in the accompanying drawing.

In the drawing Figure 1 represents an apparatus for carrying the improved method into practice. Fig. 2 is a cross section of oil discharge pipe embedded in the ashes.

Referring more particularly to the drawing, there is provided a tank 1 for supplying crude petroleum or oil, while leading therefrom is a discharge pipe 2 having an end portion 3 provided with suitable discharge openings therein arranged in the lower face of the pipe. This pipe has a suitable valve 2' for controlling the supply of petroleum or oil and leads into the fire box 4 being disposed adjacent the bottom of the box. In front of the fire box 4 is a box 4' having a filling of fire clay 6 through which the pipe 2 extends serving as a protecting medium against radiation of heat. Within this fire box and substantially filling the same there are packed wood ashes, cinders or other material 7 that will serve as an absorbent for the crude petroleum. In practice these wood ashes or cinders are packed so that the fire box of the stove or other device in which this improved method is employed is well filled, the upper surface being adjacent the damper 5 disposed beneath the grates 8. It will be noted that these cinders or wood ashes entirely cover the portion of the discharge pipe within the fire box and that the petroleum fed through this pipe works its way from the bottom of these absorbent materials upwardly through the same. The petroleum or oil being lighted at the top surface of the packing of absorbent material supplies the necessary heat which may be conducted to any point for the purposes of heating or as in the present instance may act simply as a fire for ordinary heating purposes. The

means, however, of utilizing the heat does not form a part of the present invention which has for its object, especially a method for supplying and feeding a heat producing medium to be used in place of and as a substitute for ordinary fuel.

As the petroleum or oil is gradually consumed at the top of the absorbent material there is a continual supply of the oil working its way upwardly through the cinders or ashes to replenish that consumed. As the petroleum is fed in from the bottom and rises up through this absorbent material there is a continual generation of a cheap and effective fuel. By thus feeding the petroleum through the absorbent material there is gained the advantage of obviating all flashing, which latter is the usual result with petroleum when sprayed as a heat giving medium in a burner. By supplying the crude petroleum to the lower portion of the absorbent body, beneath the ignition surface, through the supply pipe embedded therein, when starting the petroleum is diffused towards the sides of the fire-box and is then drawn upwards from its point of introduction by capillary attraction. This produces an effective diffusion of the oil throughout the absorbent body so that when it reaches the ignition surface it is uniformly spread over the surface where it is ignited. After the oil at the ignition surface has burned for a time the absorbent body becomes heated and this heat is transmitted through the body of the material to the oil supply pipe embedded therein, which in turn heats the petroleum in the pipe so that heated petroleum is discharged into the body of the material. As this heated oil is drawn upward by capillary attraction more or less vapor is generated from it by the heat derived from the heated body of the material, which vapors or gases become more rarefied as they come nearer to the ignition surface at which point they are ignited and produce an intense heat. Their escape at the ignition surface is placed under control, for instance, by the sliding plate described so that they may burn over the entire surface to produce a relatively wide area of heat distribution, or by adjusting the plate the area may be contracted so that the vapors will be discharged under a more or less extent of concentration, thus producing a more intense heat at the point of restriction. It will thus be observed that important steps in the process are the introduction of the petroleum into the absorbent body beneath the ignition surface and over the stratum of material which lies beneath the pipe so that it may be drawn upward by capillary attraction directly from its point of introduction and controlling the escape of the vapors at the ignition surface which together obtain a freer movement of the oil and reduce the liability of clogging the absorbent body.

An important feature is the heating of the oil in the

pipe before its passage into the absorbent body after the heater has been started since this in conjunction with the control of the vapors at the ignition surface tends to a freer movement of the oil and a better generation of vapors and a more intense heat from the ignition.

There may be many minor changes introduced in the method and apparatus for carrying into effect our improved process for supplying fuel for heating purposes, but such we believe to come within the scope of our invention.

What we claim and desire to protect by Letters Patent is:—

1. The within process consisting in conducting a flowing body of oil directly into a body of absorbent material and discharging it into the stratum of the material lying beneath the point of discharge and the bottom, drawing said oil upwardly through said body by capillary attraction

from its point of introduction, generating vapors from said oil by heat transmitted through the absorbent body, and controlling the escape of the vapors at the ignition surface of said body, substantially as described. 20

2. The within process consisting in conveying a continuous supply or flowing body of oil into the lower portion of a body of absorbent material, heating it within the body of said material preliminarily to its discharge thereinto, drawing said oil upwardly through said body by capillary attraction from its point of introduction, generating vapors from said oil by heat transmitted through the absorbent body and controlling the escape of the vapors at the ignition surface of said body, substantially as described. 25 30

In testimony whereof we have affixed our signatures, in presence of two subscribing witnesses.

WILLIAM THOMAS KELLEY.

CHRISTOPHER W. HOFMEISTER.

Witnesses:

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