

(No Model.)

A. F. DICE.  
OIL GAS BURNER.

No. 544,160.

Patented Aug. 6, 1895.

Fig. 1.

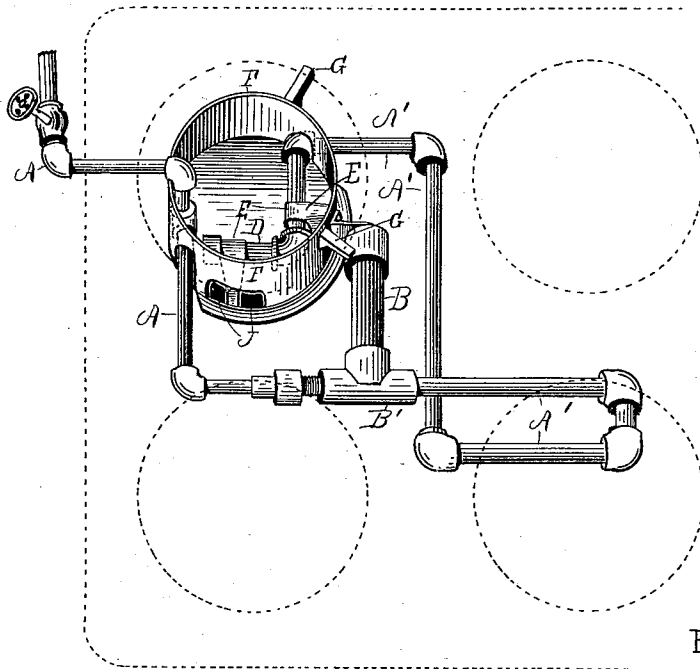


Fig. 2.

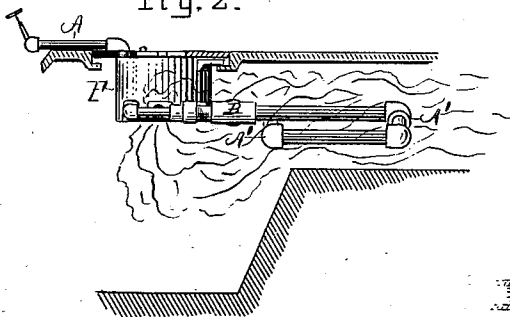


Fig. 4.

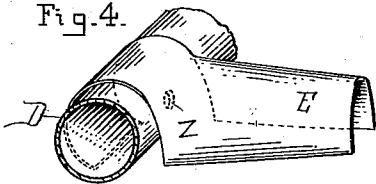


Fig. 3.

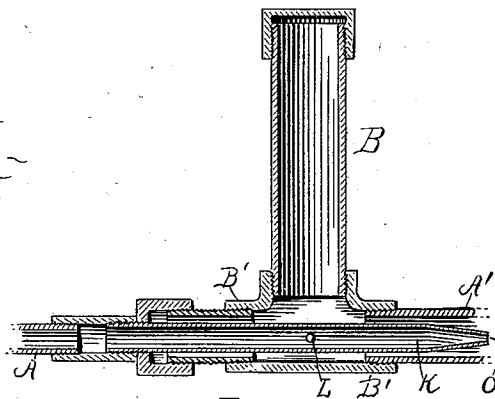
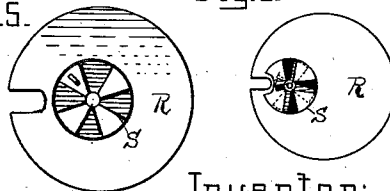


Fig. 6.

Fig. 5.



Witnesses:

*Ray Hutchins.*  
*J. S. Stanton*

Inventor:

*Andrew F. Dice*

*By Thos H. Hutchins Attorney.*

# UNITED STATES PATENT OFFICE.

ANDREW F. DICE, OF JOLIET, ILLINOIS.

## OIL-GAS BURNER.

SPECIFICATION forming part of Letters Patent No. 544,160, dated August 6, 1895.

Application filed April 12, 1895. Serial No. 545,496. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW F. DICE, a citizen of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Oil-Gas Burners, of which the following is a specification, reference being had therein to the accompanying drawings, and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a perspective view of the oil-gas burner, the broken lines showing the outlines of a stove to which the device is applied. Fig. 2 is a side view of the oil-gas burner and a section of a stove to which it is applied. Fig. 3 is a central longitudinal section of a gas-generating chamber connected with the supply-pipe. Fig. 4 is a perspective view of a shield for covering the burner-orifice and the gas escaping therefrom, and Figs. 5 and 6 are plan views of a lid having a damper for covering the burner and for regulating the draft thereto.

This invention relates to certain improvements in burners for burning coal oil or petroleum-gas, which improvements are fully set forth and explained in the following specification and claim.

Referring to the drawings, F represents a circular vessel or case having a closed bottom and having a lid R provided with a damper S for covering said vessel.

A is an oil-supply pipe having a regulating-cock and leading from an adjacent oil-receptacle to a gas-generating chamber B, and A' is a pipe leading from said gas-generating chamber B to the interior of the case F and terminates in a burner D, provided with burner-orifices, one of which is shown at Z in Fig. 4. Said burner D is closed on its outer end by a cap, and is provided with shields E for covering its burner-orifices, so as to protect the gas-jet from the draft from above and so the gas-jet may blow out through the openings J in the side of the case F into the fire-box of the stove and on the pipes A and A' and the gas-generating chamber B, in order to heat them for the purpose of generating the gas.

The inlet or supply pipe A terminates at its inner end in a nozzle K, smaller in diameter than the pipe inclosing it, as shown in Fig. 3, its nozzle end O discharging into the gas-gen-

erating pipe A' and having a drip-orifice L for feeding oil to the generating-chamber B. The supply-pipe passes into the case F, as shown in Fig. 1, and out through an orifice in its side into the fire-box of the stove and in such position that the flame from the burner is directed against it, and the gas-supply pipe A' and the gas-generator B, connected with supply-pipe A, are also arranged in the fire-box of the stove in such manner that the flame also heats them, and the outer end of the gas-supply pipe enters the side of the case F, as shown in Fig. 1, on the opposite side from pipe A and terminates in the burner D.

It is intended to place the device in the fire-box of an ordinary cook-stove, the case F being set in one of the griddle-holes and supported by means of arms G and the inlet-pipe A on the margin of the griddle-hole, as shown in Fig. 1, the pipes being within the fire-box, as shown in Fig. 2.

In operation oil is first placed on the floor of the case-bottom and ignited, and when the burner D and pipe leading to it are sufficiently heated oil is let in through the supply-pipe A, and as it passes along in the pipes and into the generator B is converted into gas, which escapes at the burner-orifices Z in the burner D. The lid or griddle R is placed over the case F, as shown in Fig. 2, so as to cover it up tightly, and draft, as may be required, is admitted through the damper S. The gas escapes from the burner-orifices and passes under the shield E, out through the apertures J of the case, and is ignited in the fire-box of the stove. The oil-supply is fed in pipe A by gravity, and the gas-generator B causes a suction as the gas passes from the said generator to the gas-pipe A' and accelerates the feed of oil from the supply, which renders it unnecessary to have a pump or other force feed for giving pressure to the oil fed in and to the gas passing to the burner, the nozzle-pipe K, having the small nozzle-opening O, preventing back-pressure of gas from the generator B. Said generator or retort B is arranged to be in a horizontal position and on a plane above the burners for the purpose of preventing oil from completely filling the generator, as is the case where the generator or retort is arranged in a vertical position for the purpose of preventing an explosion. If the gen-

erator B should be arranged in a vertical or pendent position it would fill with oil, and when heat is applied to it when filled would be liable to explode, while if arranged as  
5 shown, in a horizontal position, it cannot fill with oil, and there is no danger of explosion, and a limited supply of oil in it will be heated quicker and cause gas to generate very much quicker than if it were filled full.

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

In an oil gas burner the combination of the case F having a closed bottom forming a pan,  
15 and having a lid R provided with a draft damper S, and having the side openings J, the sup-

ply pipe A, nozzle pipe K having a drip orifice L arranged opposite the generator, generator B arranged in a horizontal position and on a plane above the burners, pipe L leading 20 from said generator to the interior of said case and terminating in a burner D having burner orifices, and shield E for covering said burner orifices, and for protecting the gas jet from draft while in said case, all arranged to 25 operate substantially as and for the purpose set forth.

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Witnesses:

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