H. A. MOREY.

LIQUID FUEL BURNER.

APPLICATION FILED SEPT. 13, 1910.

996,660. Patented July 4, 1911.

Fig. 1.

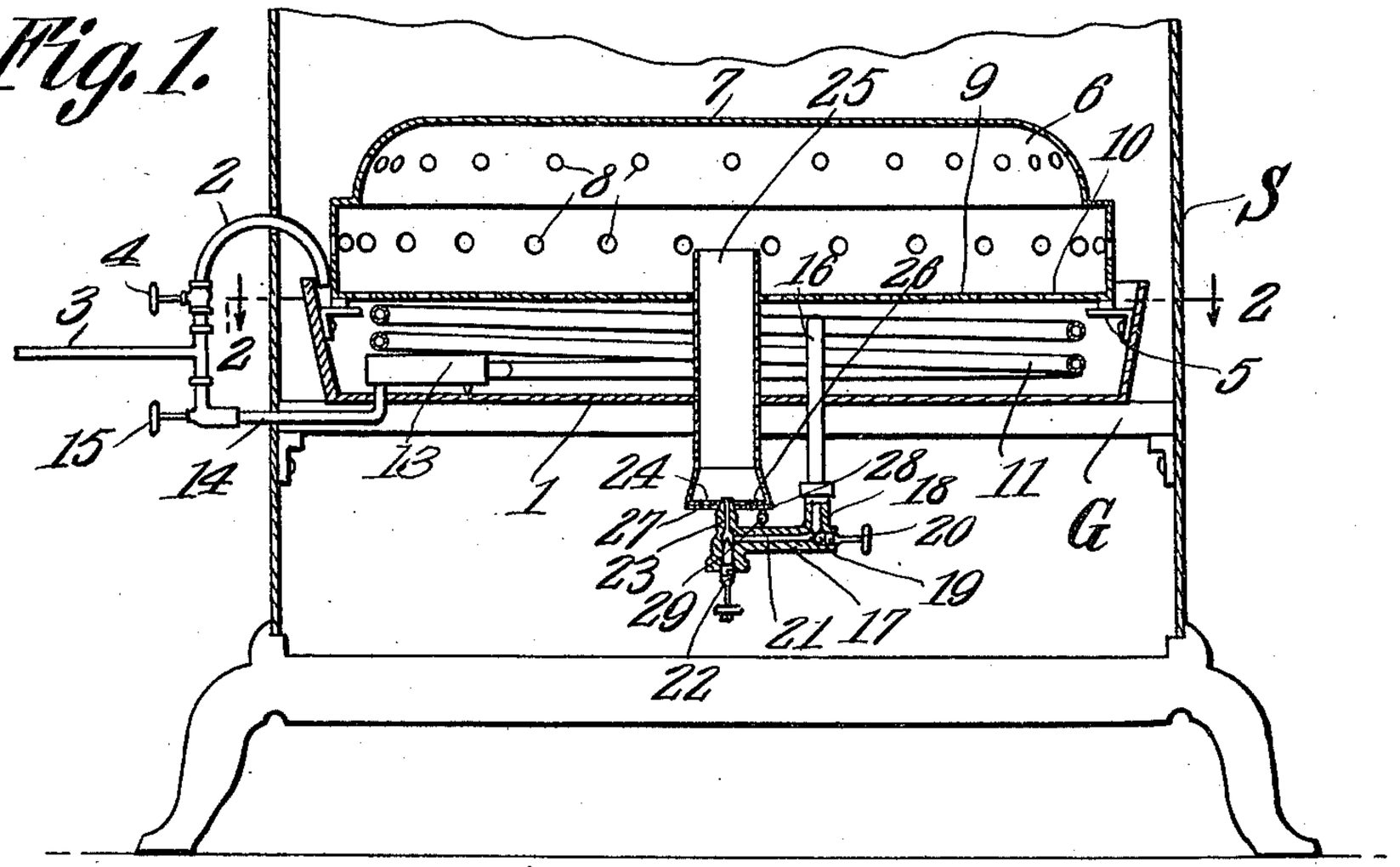
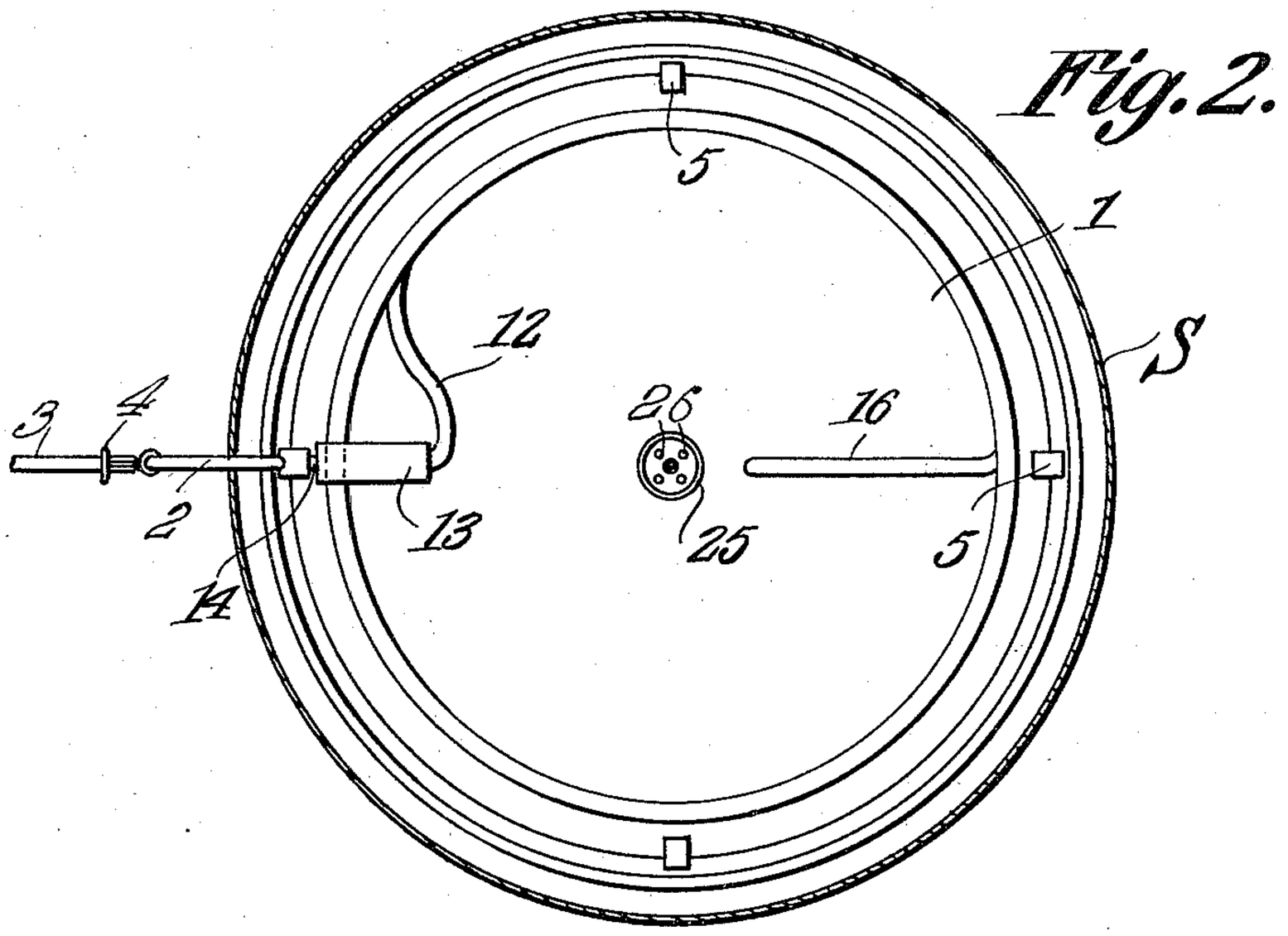


Fig. 2.



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UNITED STATES PATENT OFFICE.

HARRY A. MOREY, OF ENID, OKLAHOMA, ASSIGNOR TO THE IDEAL GAS GENERATOR COMPANY, OF ENID, OKLAHOMA, A CORPORATION OF OKLAHOMA.

LIQUID-FUEL BURNER.

996,660. Specification of Letters Patent. Patented July 4, 1911.

Application filed September 13, 1910. Serial No. 581,756.

To all whom it may concern:

Be it known that I, HARRY A. MOREY, a citizen of the United States, residing at Enid, in the county of Garfield and State of Oklahoma, have invented a new and useful Liquid-Fuel Burner, of which the following is a specification.

This invention relates to liquid fuel burners.

The object of the invention is to provide an article of this character that shall be adapted for use in connection with a stove or furnace, and in which the vaporization of the hydro-carbon may be rapidly and effectively secured, and further, in which the supply of the vaporized fluid to the mixing tube may be accomplished in a practical and exact manner, so that perfect combustion, without precipitation of carbon, and the entire elimination of fumes and smoke may be accomplished.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a liquid fuel burner, as will hereinafter be fully described and claimed.

In the accompanying drawing forming a part of this specification and in which like characters of reference indicate corresponding parts: Figure 1 is a view in vertical longitudinal section through a burner constructed in accordance with the present invention, and showing the same in position within a stove. Fig. 2 is a horizontal sectional view taken on the line 2—2 Fig. 1, and looking in the direction of the arrow thereon.

Referring to the drawing S designates the shell of a stove or furnace and G the grate bars thereof, and as these parts may be of the usual or any preferred construction, a further description thereof is deemed unnecessary.

Resting upon the grate bars is the burner which comprises a generating pan 1 to which liquid hydro-carbon is supplied through a pipe 2 that connects with a pipe 3 leading to the source of supply, which may be a tank having a pump connected therewith for generating pressure to force the hydro-carbon to the burner. Passage through the pipe 2 is controlled by a valve 4 of any preferred construction.

Arranged near the top of the pan and projecting inward from the inner walls thereof is a series of brackets 5, upon which rests the mixing chamber 6 of the burner. This chamber is circular in form and is provided with a dome shaped top 7, which is imperforate, the sides of the chamber being provided, in this instance, with two series of orifices 8 through which the gaseous mixture escapes to the interior of the stove. The bottom 9 of the chamber is also provided with orifices 10 through which the mixture escapes downward against the generating coils 11, of which there may be any desired number of turns, two being shown in this instance, ignition taking place as the gaseous mixture escapes from the openings 8 and 10. One end of the coil is bent to form an approximately goose-neck shaped extension 12 with which is combined a vaporizing chamber 13 that connects by a pipe 14 with the pipe 3 leading to the supply, a valve 15 being provided to control passage of the hydro-carbon through the pipe 14. The other end of the coil is bent to provide a down turned extension 16 with which is connected a needle valve casing 17, having an upstanding branch 18 with which the extension 16 connects.

Arranged at the bend 19 of the casing 17 is a needle valve 20 which operates to control the passage of the gaseous fluid from the pipe 16 to the bore 21 of the valve, and also completely to cut off the flow of the fluid when desired. At the end of the valve casing opposite that carrying the valve 20, and disposed at right angles thereto is a second needle valve 22 which controls the passage through the jet orifice of the nozzle 23. This nozzle projects upward through the bottom 24 of the mixing tube 25, which is provided with orifices 26, through which air passes along with the gaseous fluid to the mixing tube. In order to control the quantity of air supplied, thus to secure the proper mixture, a damper 27 is provided which is furnished with orifices 28 that are adapted to be moved into and out of register with the orifices 26 of the mixing tube, a handle 29 being provided for this purpose. Thus if it is found that with one adjustment of the damper the mixture is too rich and a red and smoky flame results, by adjusting the damper to increase the supply of air, this defect may be easily remedied.

The arrangement of the generating coils,

and the manner in which they are heated by the flames deflected downward from the mixing chamber is one of the highest features of importance, inasmuch as perfect vaporization can always be secured, thus insuring a free burning smokeless fuel.

In order to facilitate cleaning of the parts when necessary, the mixing chamber may readily be lifted from the position in Fig. 1, as it merely rests upon the brackets 5 and is disconnected from the mixing tube.

All the parts of the invention are constructed with a view to simplicity, thorough efficiency in use, and the practical elimination of danger of derangement in employment, so that the best results will be secured by its use.

I claim:

1. A liquid fuel burner comprising a generating pan provided with brackets, a mixing chamber loosely resting upon the brackets, a mixing tube projecting upward into the mixing chamber, the bottom of the latter being perforated, a generating coil arranged beneath the bottom of the mixing chamber, a vaporizing chamber connected with one end of the coil, and means for supplying liquid hydro-carbon to the vaporizing chamber.

2. A liquid fuel burner comprising a generating pan, a mixing chamber supported thereby and provided with a perforated bottom and sides, a generating coil arranged within the generating pan, a vaporizing chamber secured to one end of the coil, a mixing tube projecting upward into the mixing chamber and a valve carried by the other end of the coil and having a jet nozzle discharging into the mixing tube.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HARRY A. MOREY.

Witnesses:
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