C. C. & H. W. FOOTE.

BURNER.

APPLICATION FILED SEPT. 8, 1909.

948,009. Patented Feb. 1, 1910.

2 SHEETS—SHEET 1.

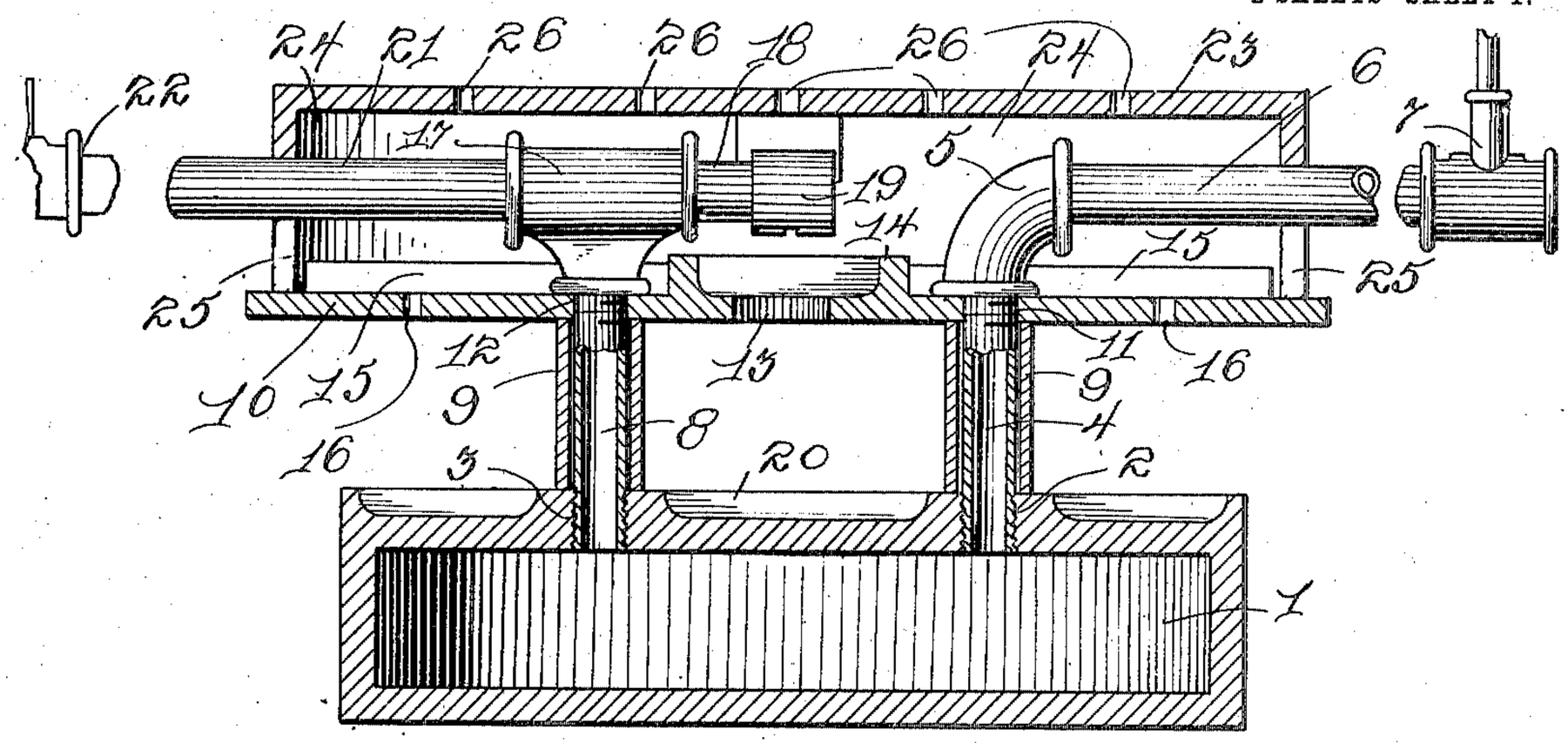

Fig. 1.

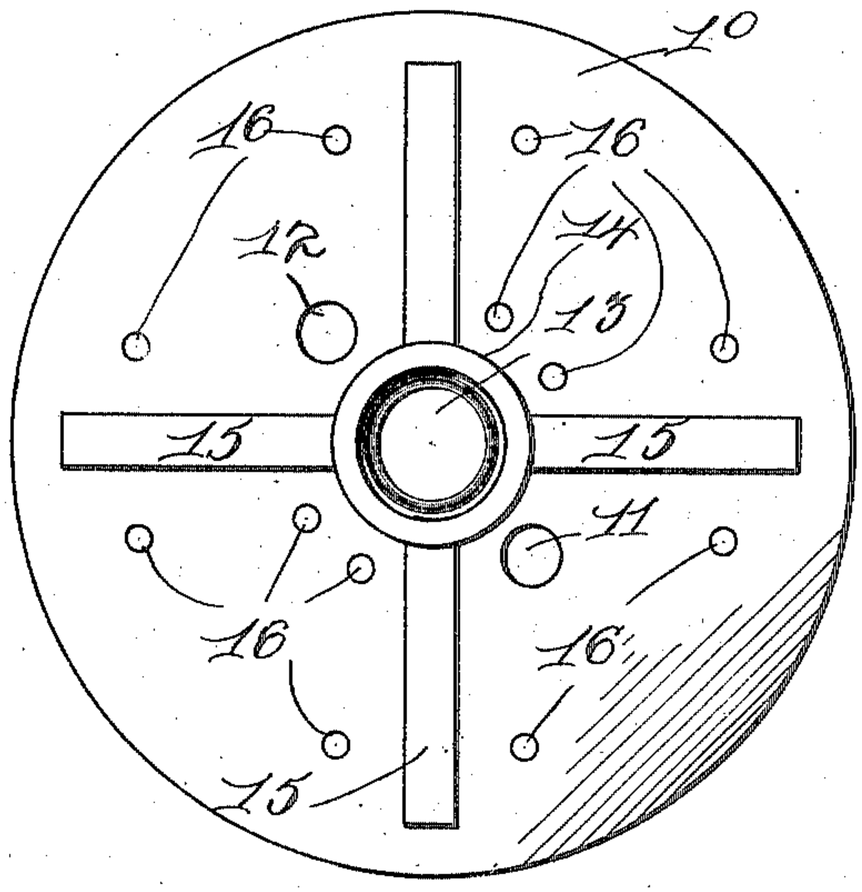

Fig. 2.

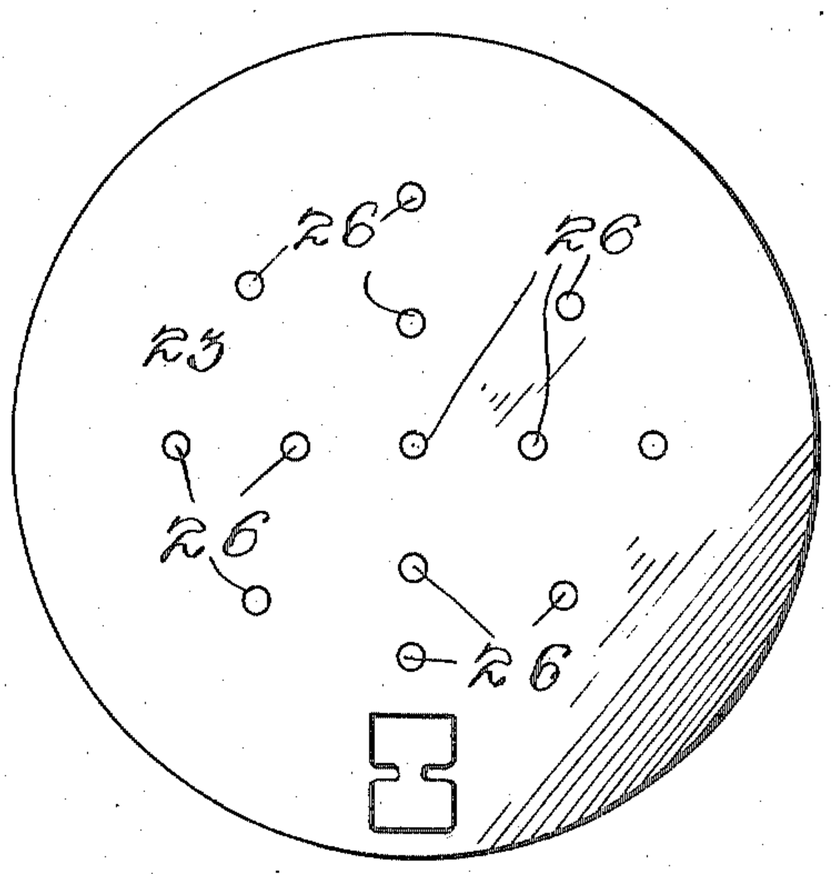

Fig. 3.

Fig. 4.

Witnesses

J. W. Wells

H. Howard Doyle

Inventors

Commodore C. Foote

and

Henry W. Foote.

By E. G. Crosman Attorney.

948,009.

C. C. & H. W. FOOTE.

BURNER.

APPLICATION FILED SEPT. 8, 1909.

Patented Feb. 1, 1910.

2 SHEETS—SHEET 2.

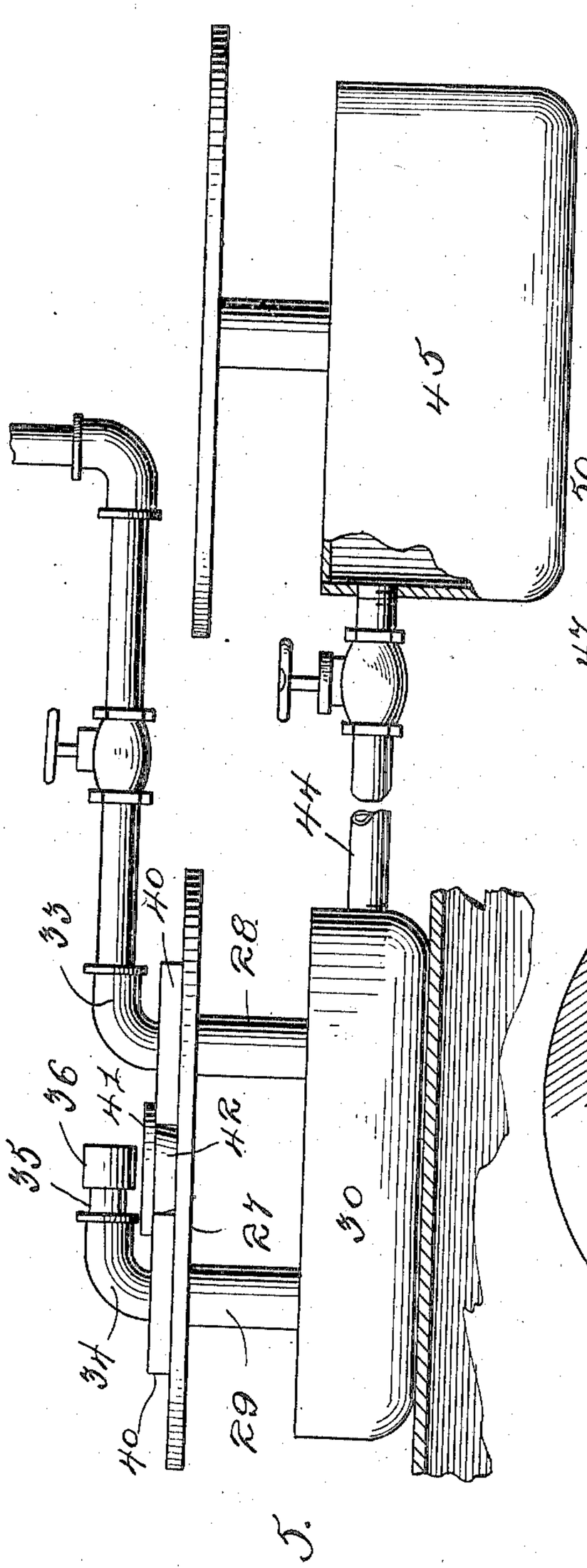

Fig. 5.

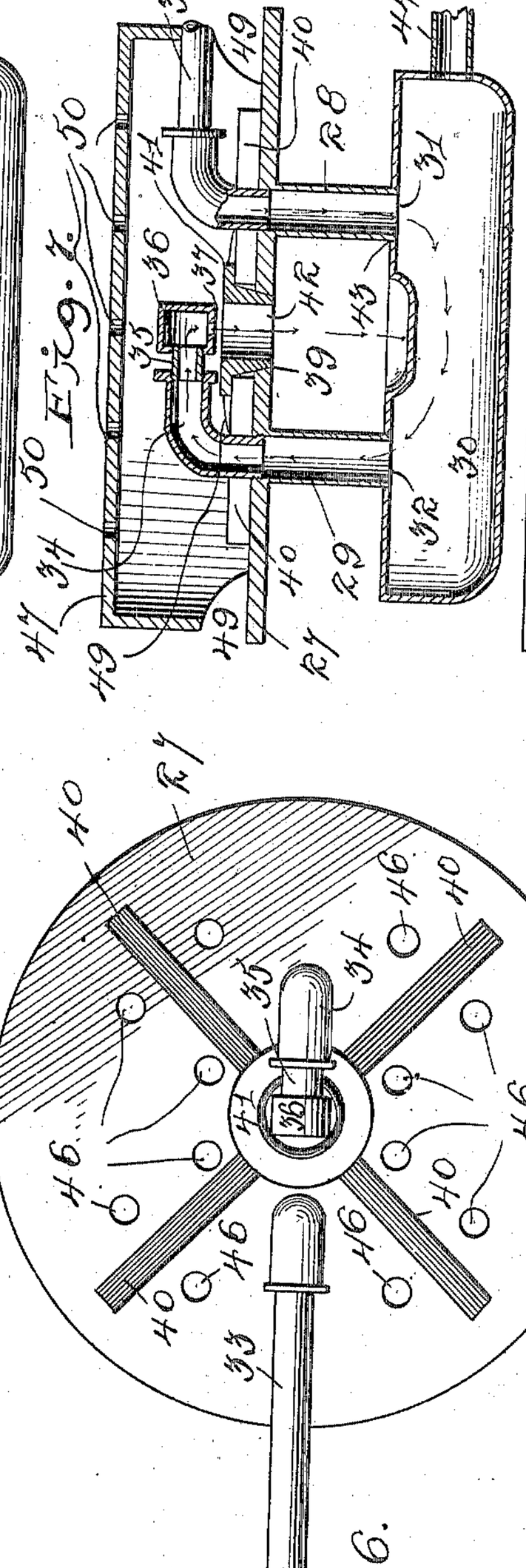

Fig. 6.

Fig. 7.

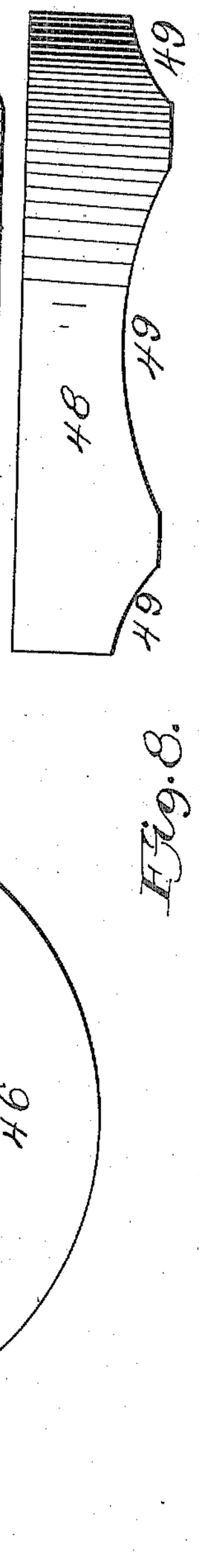

Fig. 8.

Witnesses

J. W. Wells

H. Sievers Doyle

Inventors'

Commodore C. Foote,

and

Henry W. Foote.

By C. C. Thomas Attorney

UNITED STATES PATENT OFFICE.

COMMODORE C. FOOTE AND HENRY W. FOOTE, OF MEMPHIS, TENNESSEE.

BURNER.

948,009. Specification of Letters Patent. Patented Feb. 1, 1910.

Application filed September 8, 1909. Serial No. 516,725.

To all whom it may concern:

Be it known that we, COMMODORE C. FOOTE and HENRY W. FOOTE, citizens of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Burners, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to oil burners especially adapted for use in connection with crude oil, and the principal object of the same is to provide a novel arrangement of generator and feeding pipes combined with a spreader plate and cap whereby a perfect combustion of the crude fuel will be obtained with the resultant intense heat.

In carrying out the objects of the invention generally stated above, it will be understood, of course, that the essential features of the same are necessarily susceptible of changes in details and structural arrangements, certain preferred and practical embodiments of which are shown in the accompanying drawings, wherein—

Figure 1 is a central vertical sectional view of the improved burner. Fig. 2 is a top plan view of the spreader plate therefor. Fig. 3 is a similar view of a cap for the burner. Fig. 4 is a side view of the cap. Fig. 5 is a side view of a modified burner, the cap being removed. Fig. 6 is a top plan view thereof. Fig. 7 is a central vertical sectional view taken substantially on the line 7—7, Fig. 6, the cap being shown in position. Fig. 8 is a side view of the cap used in the modified form of burner.

Referring to said drawings by numerals, 1 designates a flat cylindrical generator the top surface of which has two spaced apart internally threaded openings 2—3. An upstanding pipe 4 projects from the opening 2 and has a threaded engagement with the flanged end of an elbow coupling 5 which in turn connects with a supply pipe 6 having a controlling valve 7, said pipe 6 being in communication with a source of fuel supply not shown. A pipe 8 projects from the opening 3 of the generator 1, said pipe 8 being similar to the pipe 4. A protecting sleeve 9 surrounds each pipe 4 and 8, said sleeves having their lower ends resting on the top surface of the generator 1 and their upper ends forming supports for a spreader plate 10 provided with openings 11 and 12 for said pipes 4 and 8.

The spreader plate 10 has a central opening 13 which is surrounded by an upstanding annular flange 14 and is also provided with ribs 15 which radiate from said flange and impart strength to the plate. Said plate 10 is also provided with a plurality of small openings 16 which are scattered about the same.

The pipe 3 has its upper end connected with the flanged end of a two-way coupling 17, the flanged end of the coupling 17 and the similar end of the coupling 5 serve to clamp the plate 10 to the upper ends of the sleeves 9. A pipe extension 18 projects from the inner end of the coupling 17 and extends over the central opening of the plate 10 and has a drip nozzle 19 mounted thereon through which fuel is dropped through said central opening of the plate 10 and into the central concavity 20 of the top of the generator 1. Another pipe 21 projects from the opposite end of the coupling 17, said pipe being provided with a controlling valve 22 and communicating with a storage tank (not shown) to which fuel may be fed from the generator 1.

A cap 23 having an annular flange 24 provided with oppositely disposed slots 25 is adapted to be supported upon the plate 10 with its slots straddling the pipes 6 and 21. Said cap has a plurality of air supplying openings 26 in its top.

The operation is as follows: Fuel is admitted through the supply pipes 6 and 4 to the generator 1 and from the generator through pipe 8 to the pipe 18 and nozzle 19 and drops from said nozzle 19 through the central opening of plate 10 into the concaved portion 20 of the generator 1, where it is ignited. The burning fuel on the generator highly heats the plate 10 and also the pipes 6 and 18 as well as the generator 1 which vaporizes the fuel so that the same is delivered to the portion 20 of the generator in a vapor which combined with oxygen received through the opening of the cap 23 and plate 10, assures a complete combustion of the vapor so that the maximum of heat will be obtained.

As will, of course, be understood, when desired, a portion of the fuel may be diverted to and through the pipe 21 by ma-

nipulating the valve 22 thereof so that said fuel may be conveyed to a storage tank to be used for purposes other than that to which the burner is used.

In Figs. 5, 6, 7 and 8, a modification of the invention has been shown in which the spreader plate 27 carries two pendent pipes 28—29, the lower ends of which communicate with the generator 30 through the openings 31—32 in the top thereof. The upper ends of the pipes 28—29 are open, the pipe 28 being in communication with the valve controlled supply pipe 33, and the pipe 29 being in communication with the discharge pipe 34 which has an extension 35 provided with a nozzle 36 through which a drip opening 37 is formed. The plate 27 is provided with a central opening 39 from which the strengthening ribs 40 radiate, the inner ends of said ribs forming a seat for the outturned annular flange 41 of the funnel 42 which has a wedging engagement in the central opening 39 of the plate 37 and guides the fuel from the drip nozzle to the cup-shaped depression 43 of the generator 30 where said fuel is ignited. The generator has a valve controlled pipe communication 44 with a storage tank 45 by means of which a portion of the fuel may be diverted to said tank. The plate 37 is provided with a plurality of openings 46, similar to the openings described in connection with the preferred form of the invention.

The cap 47 has its annular flange 48 provided with the cut-out portions 49 so that said flange may be readily fitted over the supply pipe 33, and also to supply air to the interior of the cap. The top of the cap is provided with openings 50 similar to the openings of the cap described in connection with the preferred form of the invention.

In both forms of the invention, the top of the cap is flat so that cooking utensils may rest thereon while their contents are being cooked by the heat from the burner.

It will also be seen that the ribs of the spreader plate radiate from the center opening therein and terminate adjacent the outer edge of the plate, so that the cap may be mounted on the plate and surround the outer ends of said ribs, and be prevented from displacement relative to said plate by contact with the outer ends of said ribs.

What we claim as our invention is:—

1. A burner comprising a generator, a fuel supply pipe therefor, a discharge pipe for the generator, a spreader plate supported above said generator and provided with a central opening and also with radiating air openings, reinforcing ribs radiating from the central opening of said plate, a funnel projecting through the central opening of the spreader plate and having an annular flange seated on said ribs, means for delivering fuel from said discharge pipe through said funnel to the generator, and a cap fitted over said plate and provided with a flat top through which air openings are formed.

2. A burner comprising a generator, fuel feeding and discharging means for said generator, a spreader plate supported above said generator and provided with a fuel opening and also with air supplying openings, ribs on said plate which radiate from said fuel opening, and a cap removably fitted over said plate and prevented from displacement thereon by said ribs.

3. In a device of the character described, the combination with a generator, of inlet and outlet pipes therefor, a spreader plate engaging said pipes, said spreader plate being provided with a central opening and a plurality of reinforcing radiating ribs, and a movable cap resting upon the spreader plate and being prevented from displacement relative to said plate by contacting with the outer ends of said ribs.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

COMMODORE C. FOOTE.
HENRY W. FOOTE.

Witnesses to signature of Commodore C. Foote:

H. H. FULLER,
ULAH PITTS.

Witnesses to signature of Henry W. Foote:

H. A. FERRIS,
C. A. NASH.