

No. 756,317.

PATENTED APR. 5, 1904.

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HYDROCARBON BURNER.

APPLICATION FILED JAN. 23, 1902.

NO MODEL.

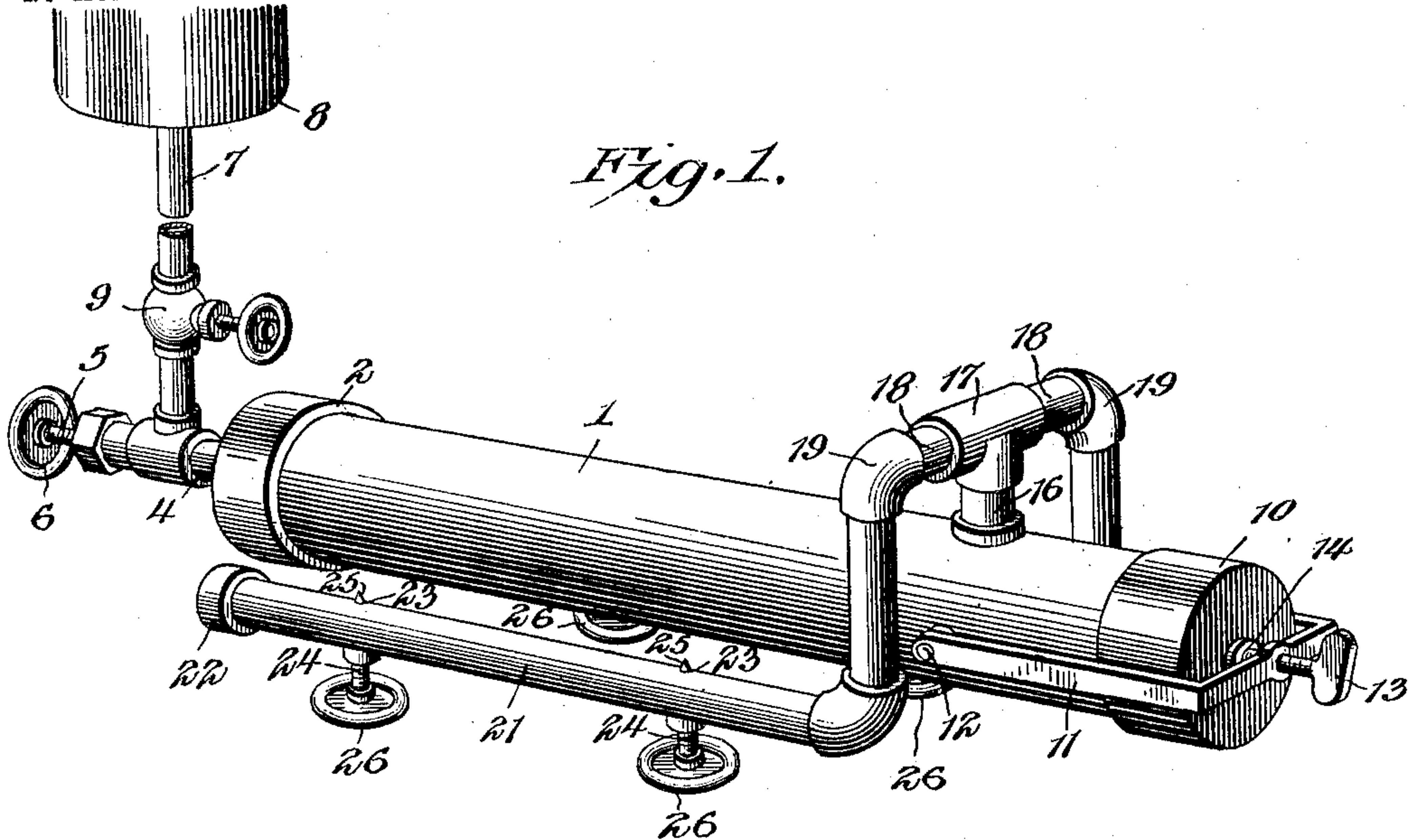


Fig. 1.

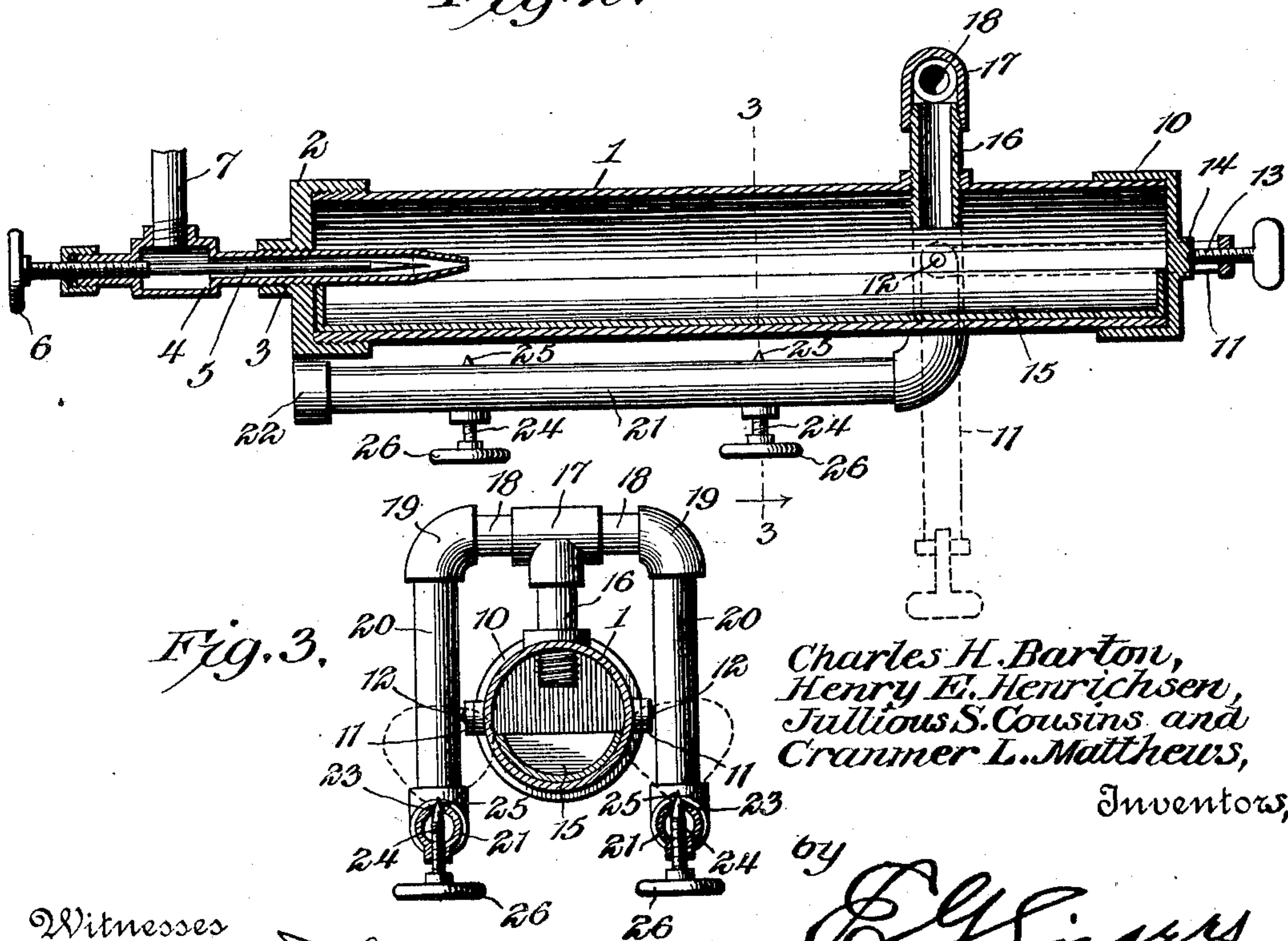


Fig. 2.

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UNITED STATES PATENT OFFICE.

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HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 756,317, dated April 5, 1904.

Application filed January 23, 1902. Serial No. 90,948. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. BARTON, HENRY E. HENRICHSEN, JULLIOUS S. COUSINS, and CRANMER L. MATTHEWS, citizens of the United States, residing at Houston, in the county of Harris and State of Texas, have invented a new and useful Hydrocarbon-Burner, of which the following is a specification.

This invention relates to hydrocarbon-burners, and is designed to provide certain new and useful improvements for utilizing crude oil as a fuel and for conveniently and effectively converting the same into gas under the heating action of the burner itself.

Another object is to provide for taking the gas from the generator and carrying the same to the burners proper in such a manner as to preclude the possibility of oil collecting in the pipe connections between the generator and the burners, whereby only pure gas is supplied to the burners and the latter are never choked or obstructed by oil or other foreign matter.

Another object is to give convenient access to the interior of the generator, so that the latter may be conveniently cleansed of soot and other products of combustion which are commonly deposited in the bottom of the generator.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a hydrocarbon-burner constructed and arranged in accordance with the present invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a cross-sectional view on the line 3 3 of Fig. 2.

Like characters of reference designate corresponding parts in all the figures of the drawings.

In carrying out the present invention there is provided a substantially horizontal cylindrical shell or casing 1, which forms the generator of the burner and is provided at its inlet or rear end with a screw-cap 2 to close said end and provided with a central perforation 3 for the insertion of a tubular injector 4, having a needle-valve 5, which is provided at its outer end with a hand-wheel 6 for controlling the valve. A suitable service-pipe 7 is connected to the injector and is in communication with a source of supply—as, for instance, an elevated tank 8. A suitable controlling-valve 9 is carried by the service-pipe, so as to control the supply of the liquid fuel to the injector.

The forward end of the generator is normally closed by means of a slip-cap 10, held against accidental displacement by means of a clamping device embodying a yoke or bail 11, having its opposite ends pivotally connected to the front end portion of the generator, as indicated at 12, and capable of being swung across the front end of the generator, so as to embrace the cap 10, and carrying a set-screw 13, piercing the central portion of the yoke and adapted to bear against the outer central portion of the cap, which is provided with a central boss or seat 14, against which the inner end of the set-screw is adapted to bear, and thereby hold the cap against accidental displacement from the generator. To give access to the interior of the generator for cleansing the same, the set-screw 13 is loosened, so as to permit the yoke to swing downwardly into the position as indicated by dotted lines in Fig. 2 of the drawings, whereby the cap 10 is free and may be readily removed from the generator, so as to expose the outer or forward end thereof.

Within the generator is a substantially semi-tubular pan or receptacle 15, which is adapted to collect all sediment which is formed in the generator, whereby all such matter may be readily cleaned from the generator by removing the pan therefrom through its outer open end.

Adjacent to the forward end of the generator is an upright tube or nipple 16, which

pierces the upper wall of the generator and projects a suitable distance into and above the same. A T-coupling 17 is applied to the upper end of the nipple, and laterally-projected pipes 18 are fitted to the respective ends of the coupling and extend at opposite sides of the generator. Elbows 19 are fitted to the outer ends of these pipes, and vertical pipes 20 depend from these elbows and connect with the respective horizontal burner-pipes 21, which lie at opposite sides and slightly below the generator. By this construction substantially L-shaped connections between the gas-pipe and the burner are provided, and these L-shaped connections extend transversely of the generator. The rear ends of the burner-pipes are provided with screw-threaded closure-caps 22, and the intermediate portion of the pipes are provided with orifices 23, through which the gas is designed to escape in the form of a flame. These orifices are controlled by valves, each of which comprises a screw-threaded stem 24, piercing the lower side of the pipe and having a tapered needle-point 25 working in the adjacent perforation 23, whereby this opening may be conveniently controlled by adjusting the stem in an endwise direction through the medium of a suitable hand-wheel 26, carried by the lower end of the stem. It will here be noted that when the burner-openings 23 are closed the pointed ends of the stems project through these openings, and in view of the fact that the walls of the latter are tapered outwardly to correspond to the points of the stems the latter act to clean away any obstructions or accumulation which may collect upon the walls of the opening.

In the operation of the device oil is admitted to the interior of the generator 1 through the valve or injector 4, said oil collecting in the pan or receptacle 15. Heat is then applied to the generator in any preferred manner, so as to convert the oil into gas, which will pass upwardly through the nipple 16 and through the connecting-pipes to the burners 23, where it may be ignited by means of a match or otherwise, so as to emit flames which strike the generator, as indicated by dotted lines in Fig. 3, so as to maintain said generator in a heated condition to continue the formation of gas. It will here be noted that the gas is taken from the top of the generator instead of from the bottom or one side thereof, whereby it is impossible for any oil to pass through the connecting-pipes to the burners and interfere with the effective combustion of the gas. Moreover, the nipple 16 is projected into the interior of the generator and terminated short of the bottom thereof in order that it may form a deflector or obstruction against which the incoming oil may strike should the flow be strong enough to carry the

oil that far, and by this means it is impossible for the incoming oil to gain entrance to the gas-pipes.

While no specific application of the present form of burner has been shown, the device is particularly designed for application for cook-stoves, although it may be used to generate heat for any purpose whatsoever.

From the foregoing description it will be apparent that the device of the present invention is exceedingly simple and inexpensive, readily cleansed, and not liable to get out of order. The fuel is introduced at one end of the generator, and the opposite end is capable of being opened, so as to give convenient access to the interior of the generator for cleansing the same, while the burners and the gas-pipe connections between the burners and the generator are located so as not to interfere with that end of the generator which is capable of being opened for the purpose of cleansing the same.

What we claim is—

1. An oil-burner, comprising a horizontal generating-chamber, a fuel-injector piercing one end of the chamber, a gas-pipe piercing the top of the chamber with its lower open end projected across the range of the injector to form a deflector and terminated short of a predetermined fuel-level, and burners connected to the gas-pipe and in operative relation with the generating-chamber.
2. In an oil-burner, the combination of a tubular generator, an oil-injector piercing one end thereof, a removable closure-cap for the opposite end of the generator, a yoke pivoted to said opposite end portion of the generator and capable of embracing the cap, a set-screw piercing the outer free end of the yoke and adapted to bear against the cap to hold the same in place, burner-pipes lying at opposite sides of the generator and in parallelism therewith, each pipe being provided at its upper side with tapered burner-openings, needle-valves transversely piercing the pipes and having their points working in the respective burner-openings, a nipple piercing the top of the generator near the forward end thereof, laterally-projected pipes connected to the nipple, and pendent pipes between the outer ends of the lateral pipes and the forward ends of the respective burner-pipes.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

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