

(No Model.)

H. BRAGG.
PETROLEUM FLUID BURNER.

No. 505,417.

Patented Sept. 19, 1893.

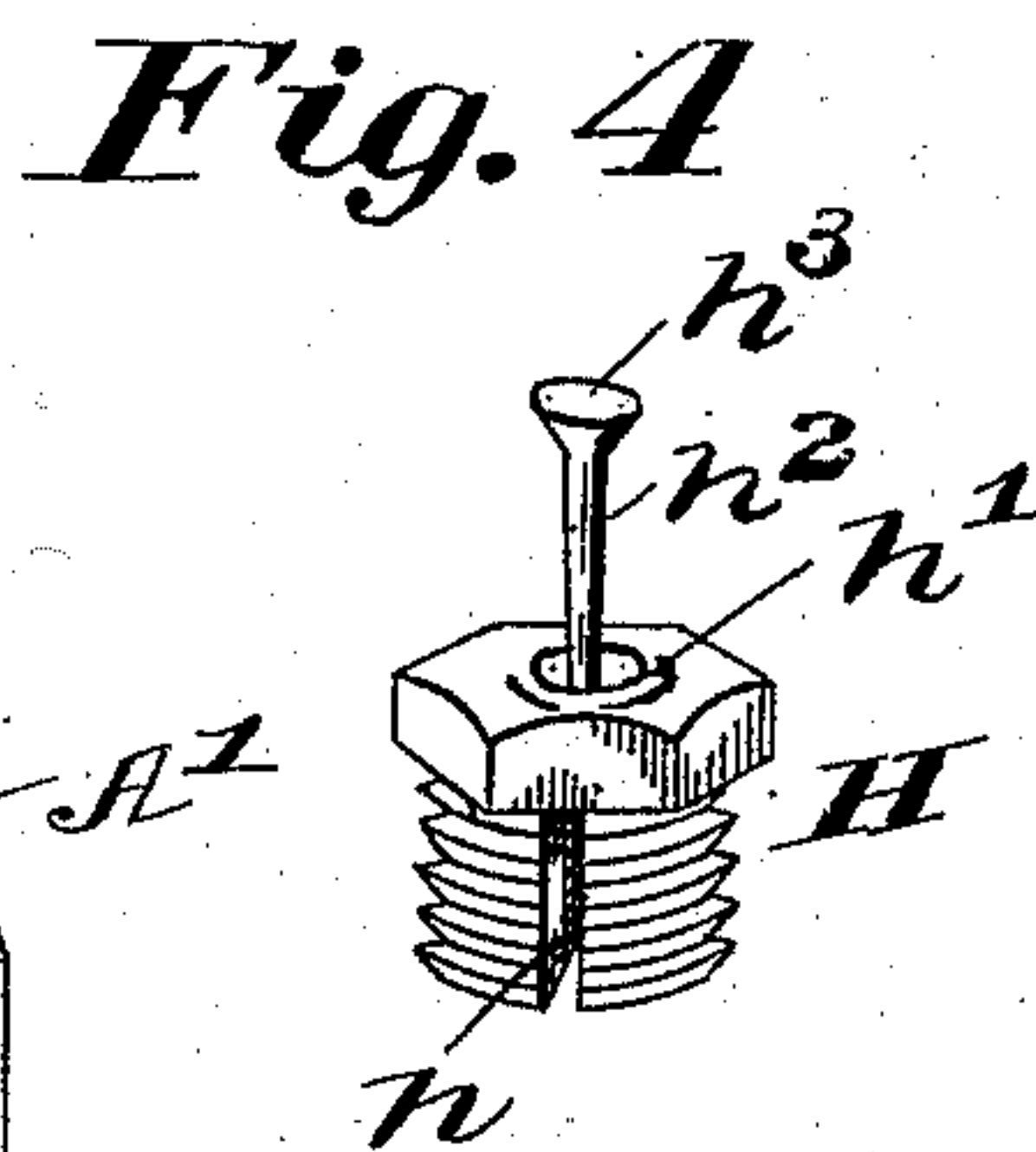
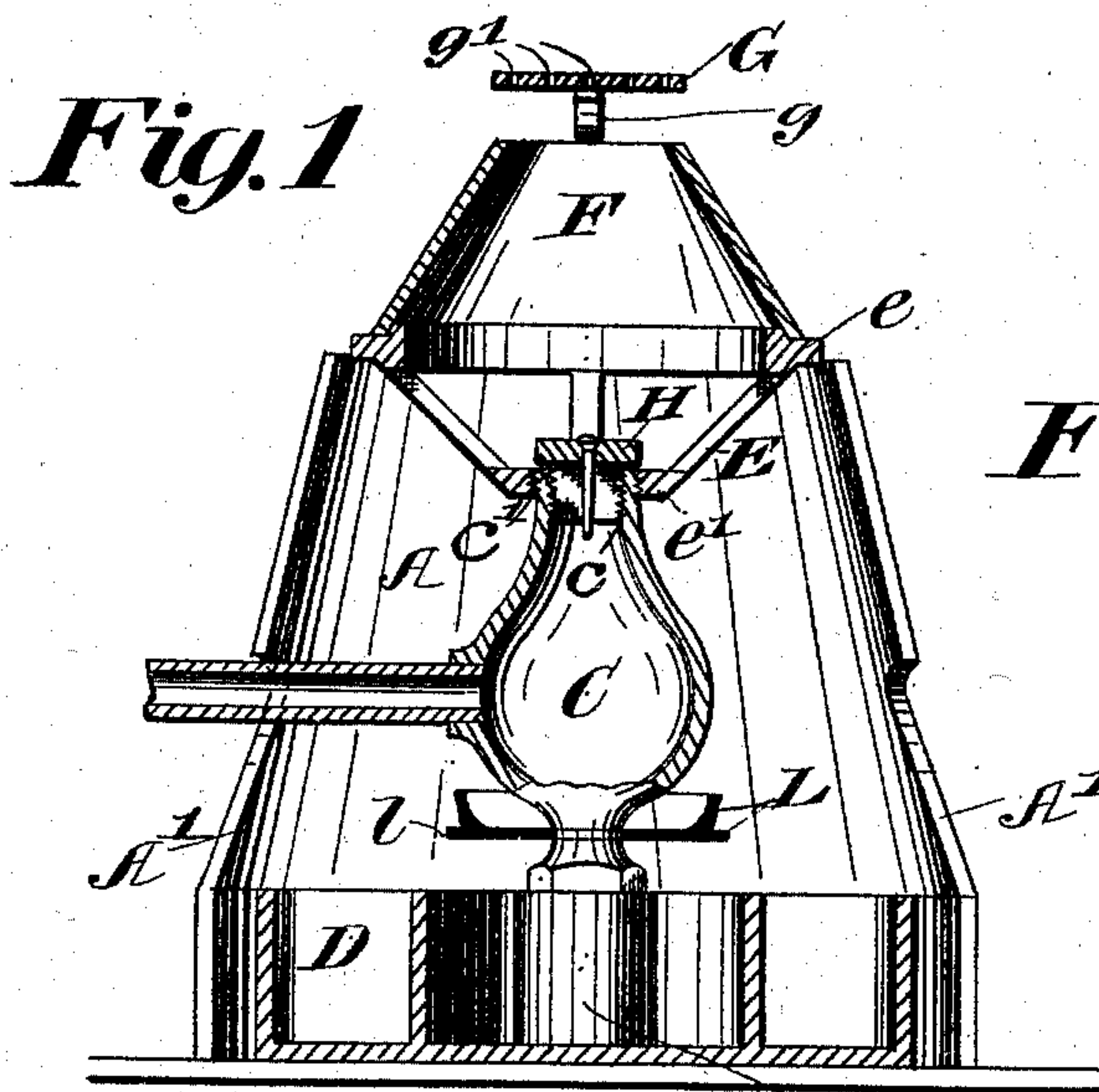
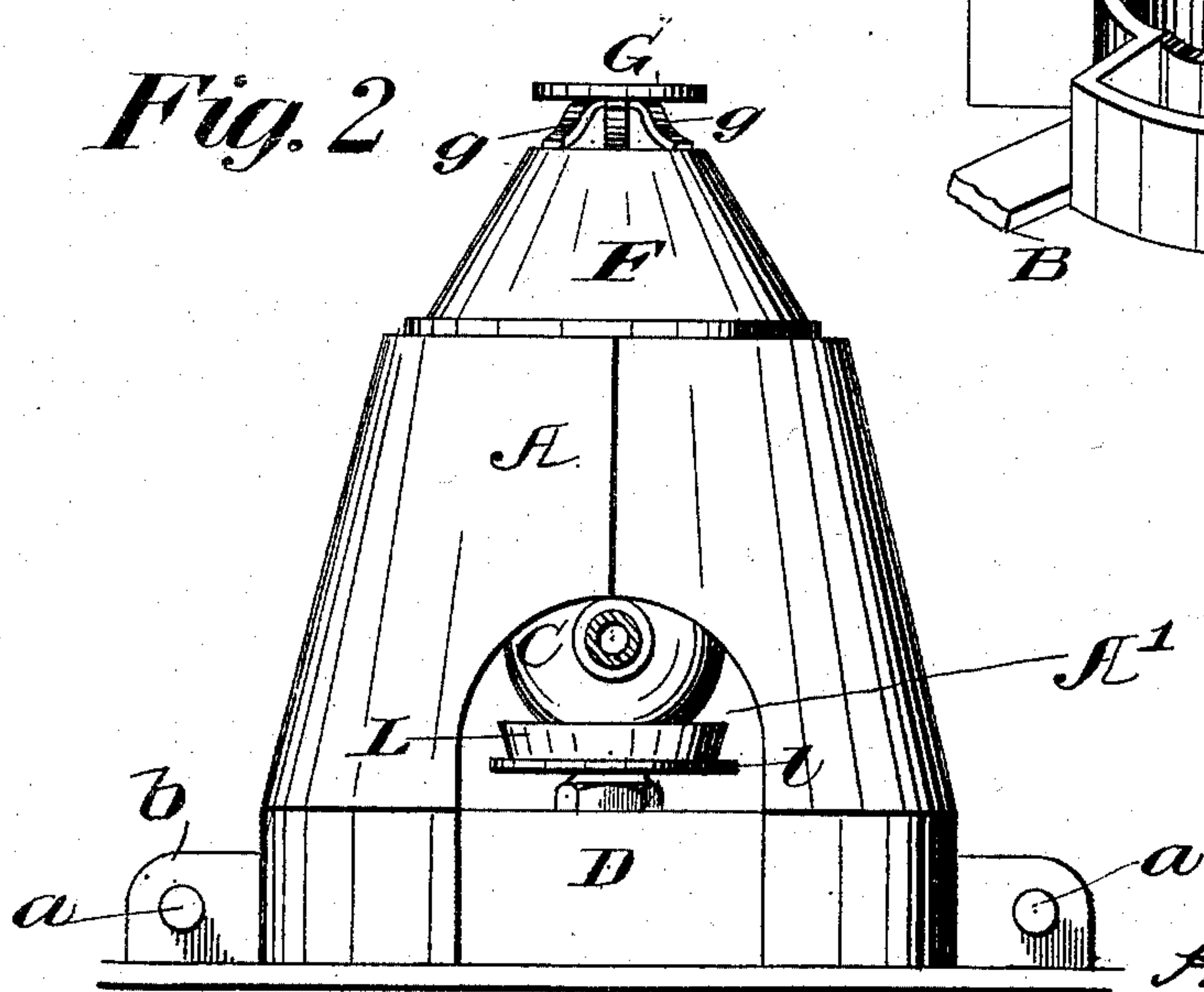
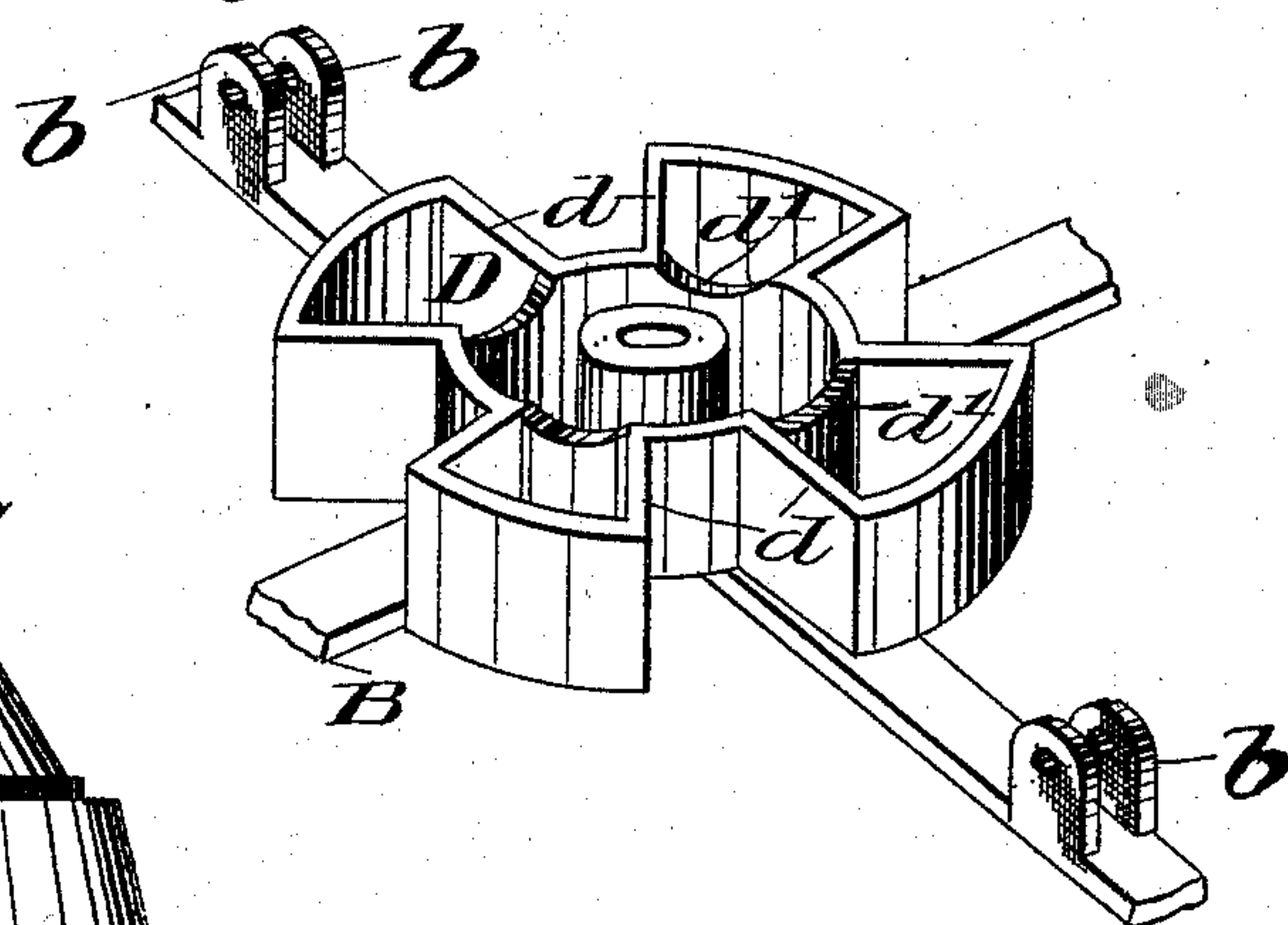


Fig. 3



INVENTOR:

Harry Bragg

WITNESSES:

J. B. Bapst
G. J. Jittmar

By

W. M. Moulton

Attorney.

UNITED STATES PATENT OFFICE.

HENRY BRAGG, OF CLEVELAND, OHIO.

PETROLEUM-FLUID BURNER.

SPECIFICATION forming part of Letters Patent No. 505,417, dated September 19, 1893.

Application filed December 30, 1891. Serial No. 416,599. (No model.)

To all whom it may concern:

Be it known that I, HENRY BRAGG, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Petroleum-Fluid Burners, of which I hereby declare the following to be a full, clear, and exact description such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in hydrocarbon burners, and especially to that class of such burners which are especially adapted for burning the heavier hydrocarbon oils, natural gas, &c., and the object of the invention is to provide a burner of this description which will burn such fuels without odor or leakage and which will not be liable to become clogged or stopped by depositions of carbonaceous matter thereupon.

My invention further contemplates certain improvements in the construction of such burners whereby certain important advantages are attained, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In order that my invention may be the better understood, I have illustrated in the accompanying drawings a burner embodying my improvements, in which drawings—

Figure 1 is a vertical axial section of the burner and Fig. 2 is a side elevation of the same. Fig. 3 is a detail perspective view of the burner support detached, and Fig. 4 is an enlarged perspective detail of the valve for governing the outflow of the fuel.

In the views A is the shell of the burner, constructed in two sections each of which is provided at the center of its lower edge with a projecting perforated lug, hinged at *a* between two lugs or eyes *b*, formed at opposite sides of the ends or arms of the base supporting frame B, as clearly seen in Figs. 2 and 3. This shell A when closed together as seen in Figs. 1 and 2, is of a conical form and incloses the pan D mounted on the frame B and having a central interiorly screw threaded lug or boss D', adapted to receive the screw threaded lower end of the pear-shaped generating chamber or vaporizer C, said shell being provided

at opposite sides with perforations A', through one of which protrudes the oil supply pipe I, as seen in Fig. 1. The upper end of the vaporizer C is exteriorly screw threaded at *c'*, and on it screws the interiorly screw threaded collar *e'*, of the open conical frame E, which is provided at its upper end with a ring *e*, the upper face of which is grooved around its outer side to receive the lower edge of the funnel or inverted cone F, as seen in Fig. 1.

On the top of the cone F is arranged the spreader G, supported on legs *g, g*, slightly above the edges of the said cone, and provided with perforations *g'*, as clearly seen in the drawings.

The upper end of the vaporizer C is open and is provided with interior screw-threads *c*, (Fig. 1) and into this open end or mouth of the vaporizer screws the screw threaded plug H, having a polygonal upper end or head and provided with a central bore and a raised valve seat *h'*, at the upper end thereof, in which bore is arranged the valve stem *h²*, of a valve *h³*, fitting in said valve seat as seen in Fig. 1.

Formed diametrically through the lower screw threaded portion of plug H is a slit or saw cut *h*, as seen in Fig. 4, the upper end of said slit projecting, when the plug is screwed into the mouth of the vaporizer, slightly above the edge of the same, whereby outlets are formed for the vapor about the sides of said plug, as will be readily understood.

Formed on the lower portion of the vaporizer C is an annular heating pan L, provided with a projecting circumferential flange *l*. This flange is of a less diameter than the internal diameter of the annular chamber of the pan D, as clearly seen in Fig. 1, whereby any oil or fuel which may drip therefrom will fall into the said annular chamber. The said pan D has, in addition to said annular central chamber, four auxiliary chambers *d*, in the form of equally spaced segments, being in communication with the said annular chamber through recesses *d'*, formed in the upper portions of the walls thereof, as clearly seen in Fig. 3.

The operation is as follows:—The oil being admitted to the vaporizer overflows therefrom through the slits *h* in plug H, running down around the sides of the vaporizer into

the pan L, from which it overflows over flange 7 into the central annular chamber of pan D. When this central chamber shall have become almost filled with the oil, the chambers 5 d , d will commence to fill by the overflow from the recesses d' . Thus it will be seen that the oil for the initial heating is distributed and burned over a very large surface, whereby its combustion is assured. The vaporizer having become sufficiently heated, 10 the oil therein is vaporized and passes in this form through the slits h and is ignited, passing up through the cone F and being projected out over the upper edges thereof by the 15 spreader G under the draft through the cone.

The function of the valve h^3 is to provide a regulator for the outflow of fuel from the vaporizer. It will be understood that any ordinary or normal outflow from the vaporizer will be by way of the slits h , but in case 20 the pressure in the vaporizer should rise above the normal, the excessive pressure will raise the valve h^3 from its seat, and the gas will escape by way of the axial bore of plug H, also.

25 Having thus described my invention, I claim—

1. In a hydrocarbon burner, the combination with a frame, of a vaporizer mounted thereon, and a shell inclosing said vaporizer, 30 said shell being in two sections, each of which is hinged to the frame, substantially as set forth.

2. In a hydrocarbon burner, the combination with a frame, of a vaporizer mounted 35 thereon and provided with a supply pipe, and a shell inclosing said vaporizer, said shell being provided with oppositely arranged openings through one of which said supply pipe protrudes, and being in two sections, each of 40 said sections being hinged to said frame, substantially as set forth.

3. In a hydrocarbon burner, the combination with a vaporizer having a supply pipe and a vapor outlet, of a slitted plug arranged

in said vapor outlet with its slits communicating between the interior and exterior of 45 said vaporizer, said plug being also provided with a central bore and a valve seat, and a valve adapted to fit said valve seat, substantially as set forth. 50

4. In a hydrocarbon burner, the combination with a frame, of the pan D, mounted thereon and provided with a central interiorly screw threaded boss, the vaporizer having a supply pipe and an outlet and being 55 provided with a screw threaded lower portion engaging said boss of the pan, substantially as set forth.

5. The combination in a hydrocarbon burner, of a vaporizer having a supply pipe and a reduced and screw threaded upper end forming a vapor outlet, of the frame E having a screw threaded collar engaging said screw threads 60 on the vaporizer, said frame being provided with a ring e' at its upper end, and a cone F 65 mounted on said ring, substantially as set forth.

6. The combination in a hydrocarbon burner, of a vaporizer provided with a supply pipe and having an interiorly and exteriorly screw 70 threaded upper end forming a vapor outlet, the diametrically slitted plug H arranged in said upper end of the vaporizer with its slits communicating between the interior and exterior thereof, said plug being further provided with a central bore and a valve seat, 75 the valve fitting said seat and having a stem arranged in said central bore of the plug, the frame E having an interiorly screw threaded collar at its base, said collar engaging the 80 exterior screw threads of the vaporizer, and the cone F mounted on said frame, substantially as set forth.

HENRY BRAGG.

Witnesses:

WM. M. MONROE,
F. H. MOORE.