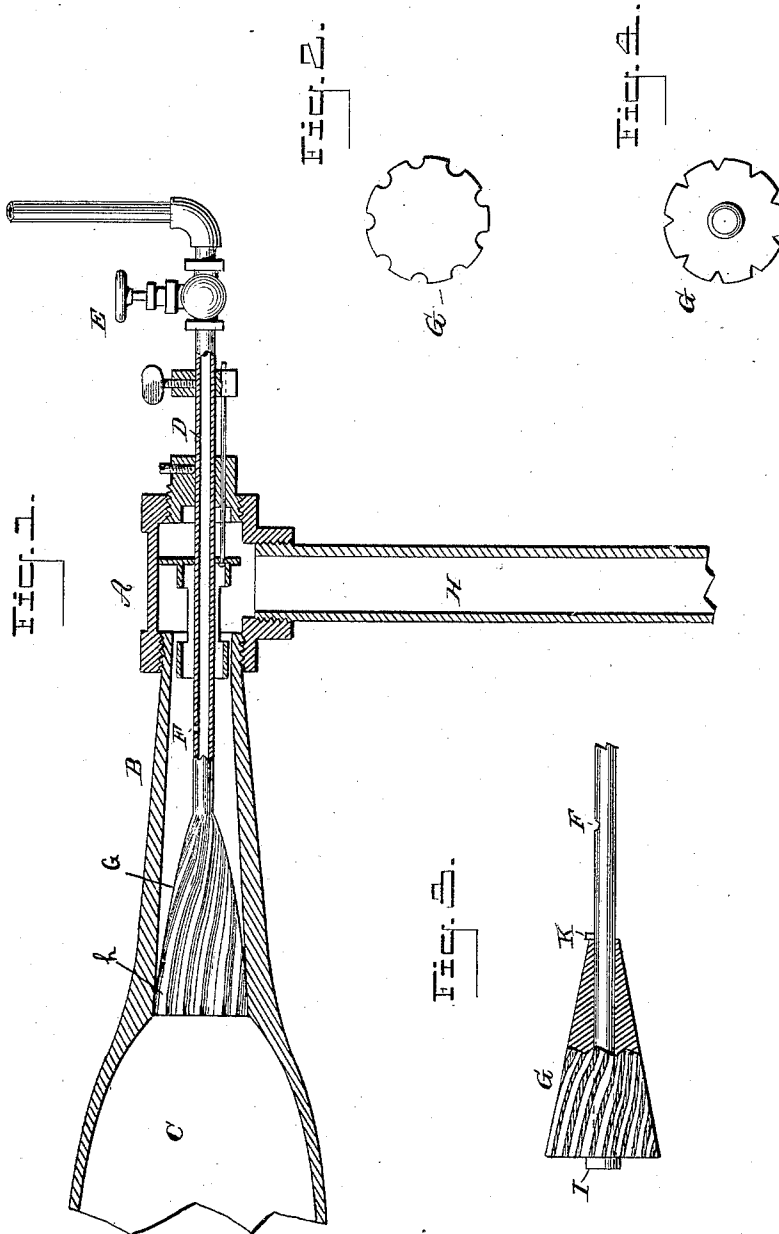


(No Model.)

B. H. ELWOOD.
HYDROCARBON BURNER.

No. 449,315.

Patented Mar. 31, 1891.



WITNESSES:

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BYRON H. ELWOOD, OF FORT PLAIN, NEW YORK.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 449,315, dated March 31, 1891.

Application filed August 8, 1889. Serial No. 320,074. (No model.)

To all whom it may concern:

Be it known that I, BYRON H. ELWOOD, a citizen of the United States, and a resident of Fort Plain, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

My invention relates especially to devices employed for burning hydrocarbon oil for heating purposes, and has for its object the provision of a burner cheap and simple to construct, easy to manipulate and control, and very effective in operation.

To attain the desired end my invention consists, essentially, in the combination, with a conduit for compressed air, of an oil-conduit terminating at a flaring spool or head, said spool being provided with grooves in its periphery having a spiral incline, said grooves serving to conduct the oil from the outlet from the supply-pipe to the point of ignition, where it is completely vaporized and mingled with the air. The spool is secured to the extremity of the oil-pipe or a solid extension thereof, or is made to revolve thereon, all of which will be hereinafter first fully described, and then pointed out in the claim.

In the drawings, Figure 1 is a longitudinal sectional view of my device. Fig. 2 is a front elevation of the spool or head. Fig. 3 is a side elevation of a modified form of spool or head. Fig. 4 is a front elevation of said last-mentioned spool or head.

Like letters of reference indicate corresponding parts.

A is the casing, and B is a tube secured to the front end thereof, carrying at its free extremity a bell-shaped mouth C, designed for entering a furnace or other chamber where it is desired to utilize the heat of the burner.

D is an oil-supply pipe leading from any convenient reservoir.

E is a valve for controlling the flow of oil.

F is an opening through the top wall of the oil-supply pipe D for the escape of the oil.

H is a supply-pipe for air under pressure.

At the outer extremity of the oil-pipe D, which is made solid or closed, is located the flaring spool or head G, having grooves *h* formed in its periphery, either concave, as

illustrated in Figs. 1 and 2, or as illustrated in Figs. 3 and 4. This spool or head may be permanently fixed to the outer extremity of the oil-pipe or placed loosely thereon, as illustrated in Figs. 3 and 4, so that it may be caused to rotate by the current of compressed air. When constructed as last mentioned, the spool presses against a flange I at the extremity of the oil-pipe, and is held against longitudinal movement by a pin K.

When constructed and arranged as above described and placed in position for use, the operation of my burner is as follows: Oil being admitted to the supply-pipe and air forced into the casing B, the oil flows out of the perforation F and is caught by the current of air and driven up the surface of the spool or head and through the grooves thereon, the force of the air throwing it off from the outer extremity of the head in a fine spray ready for ignition in the bell-shaped mouth C. In order to insure the thorough atomization of the oil, when the spool or head is made to revolve through the medium of the compressed air the oil is finely sprayed from the outer edge of the spool and thrown outward into the combustion-chamber by the centrifugal force exerted.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

In a hydrocarbon-burner, the combination, with a casing having an air-inlet pipe, of a burner proper comprising a tube secured at one end to the said casing and carrying at its other end a bell-shaped mouth, an oil-pipe passing through the inner end of said casing into the said burner-tube, and a flaring grooved spool or head located at the extremity of the oil-pipe, supported thereby, and extending along the said burner-tube to the inner end of the bell-shaped mouth and receiving oil from said oil-pipe, substantially as shown and described.

Signed at New York, in the county of New York and State of New York, this 7th day of August, A. D. 1889.

BYRON H. ELWOOD.

Witnesses:

ARTHUR M. PIERCE,
GERTRUDE WARD.