

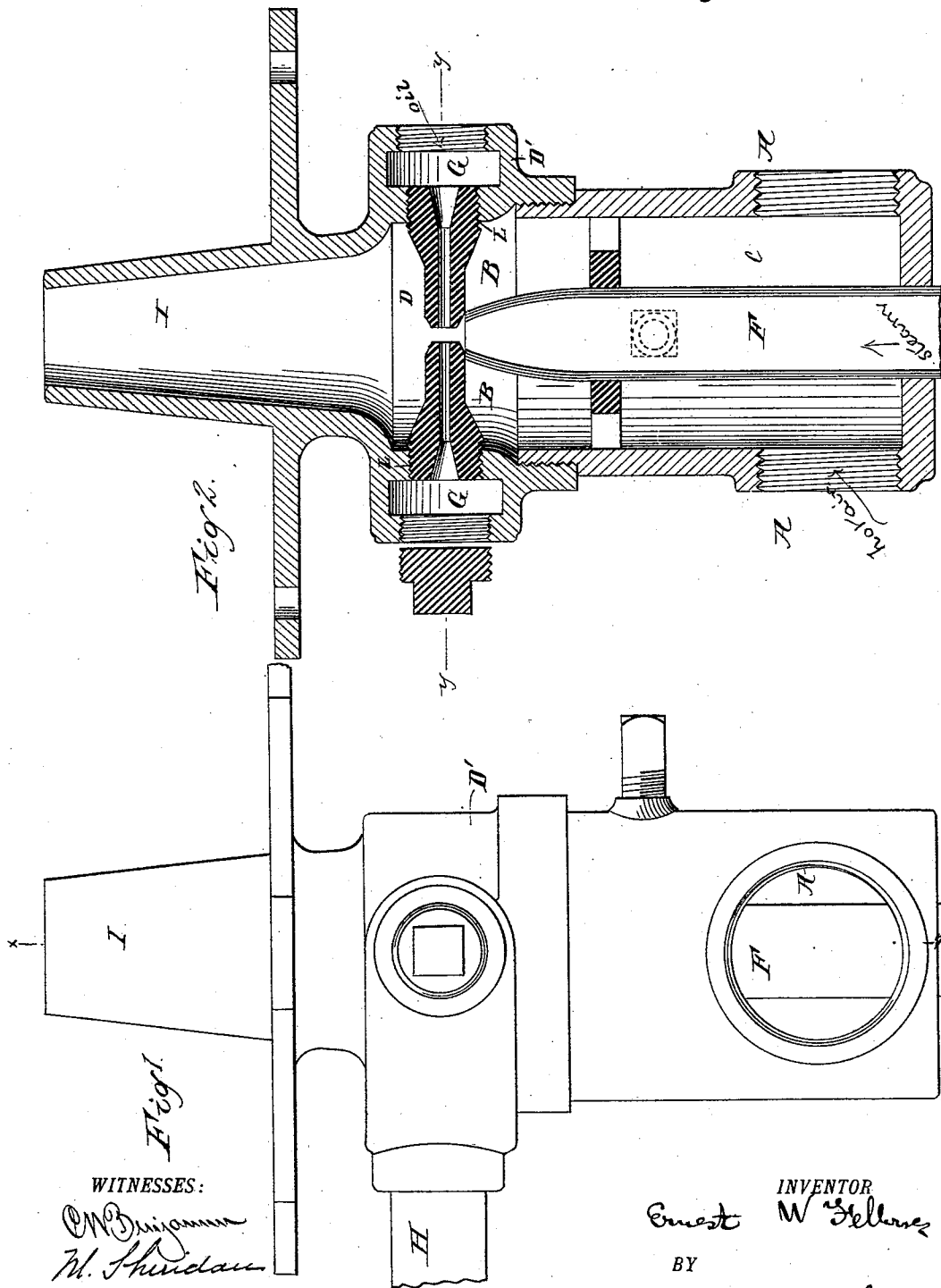
(No Model.)

2 Sheets—Sheet 1.

E. W. FELLOWES.
HYDROCARBON BURNER.

No. 425,872.

Patented Apr. 15, 1890.



WITNESSES:

W. B. Briggman
M. Shindler

INVENTOR

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BY

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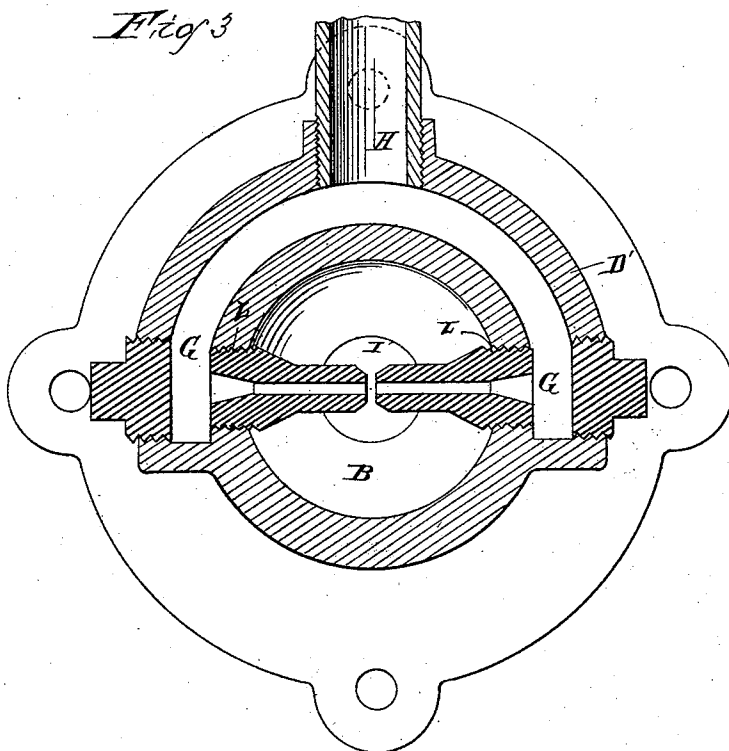
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HYDROCARBON BURNER.

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WITNESSES.

W. Benjamin
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UNITED STATES PATENT OFFICE.

ERNEST W. FELLOWES, OF ENGLEWOOD, NEW JERSEY, ASSIGNOR TO
ERNEST T. FELLOWES, OF SAME PLACE.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 425,872, dated April 15, 1890.

Application filed January 17, 1889. Serial No. 296,622. (No model.)

To all whom it may concern:

Be it known that I, ERNEST W. FELLOWES, of the town of Englewood, county of Bergen, and State of New Jersey, have invented a new and useful Improvement in Hydrocarbon Burners or Atomizers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and accurate description.

The object of my invention is to produce a new and improved hydrocarbon burner or atomizer which will be compact, easily worked, and capable of affording a very complete and powerful combustion at a small cost.

My invention consists in the arrangement and construction of the various parts of the burner, as described hereinafter.

In the drawings, Figure 1 represents a side elevation of the burner; Fig. 2, a section of Fig. 1 in the line *xx*; Fig. 3, a section in the line *yy* of Fig. 1.

A A represent the ends of two hot-air pipes opening on opposite sides into the chamber C. These two pipes are connected with a hot-air furnace or any other suitable source of hot-air supply, and thus apply hot air to my burner.

The chamber C opens into and conducts the hot air entering it into the mixing-chamber D, formed in the body D'. Passing into such mixing-chamber D is the steam-pipe F, through which steam is injected by proper pressure into such mixing-chamber. The steam-pipe F is connected by suitable connections with any proper source by which steam can be injected through the said pipe F into the mixing-chamber. Entering into the mixing-chamber D at opposite sides and at right angles with the steam-pipe F are the nozzles B B, through which the petroleum, tar, or other suitable liquid fuel is supplied to the mixing-chamber, there to mingle with and be thoroughly atomized by the steam passing into the chamber at right angles to these nozzles B B, and with the hot air drawn into the chamber D from the hot-air pipes through the chamber C by the current induced in the chamber by the mingling of the steam with the petroleum or other fuel.

The petroleum, tar, or other suitable fuel is supplied to each of the nozzles B B in about equal quantities from the cored passage G, from which it is forced by pressure through the pipe H from any proper tank or source of petroleum or other oil supply.

I is the burner, through which the fuel formed by the atomization of the mingled steam, oil, and hot air passes to be ignited.

The nozzles B B are provided with screw-threaded butts L, which screw into the passage G, whereby their relative distance to and from the end or nozzle of the steam-pipe F may be adjusted and thus the character of the flame varied, a larger or smaller flame being produced at the end of the burner, according as the nozzles B B are brought near to and lengthened from the end of the steam-pipe F.

The steam-pipe F and oil-pipe H are furnished with proper valves, by which the supply of steam and oil can be regulated as desired, a greater or less supply of each being furnished, as desired.

The operation of my improvement is as follows: The oil issuing through the nozzles B B into the chamber D under pressure mingles with and is sprayed by the steam passing into the chamber at right angles to the oil, while the oil and steam are also mingled with the hot air and gases from the furnace or other source of hot-air supply, which are drawn into the chamber D through chamber C and hot-air pipes A by the current induced by the mingling of the oil and steam in the chamber D. The atomized fuel then passes into the burner I, whence it issues from the end of the burner in a state favorable to instant and complete combustion, and can be ignited like ordinary gas.

The burner is very compact and portable, and is designed to be attached by suitable appliances to the front of the boiler, and preferably to the door itself of the boiler.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a hydrocarbon-burner, the combination, with the air-pipe having air-ports, and the

hollow body D', to which said pipe is secured,
of a steam-pipe within said air-pipe, oil-noz-
zles secured radially within said body at the
end of said steam-pipe, said body having a
5 cored chamber G, connecting said oil-nozzles,
and an oil-supply pipe connected to said
chamber G, substantially as set forth.

In witness whereof I have hereunto set my
hand this 14th day of January, 1889.

E. W. FELLOWES.

In presence of—

M. SHERIDAN,
CHARLES G. COE.