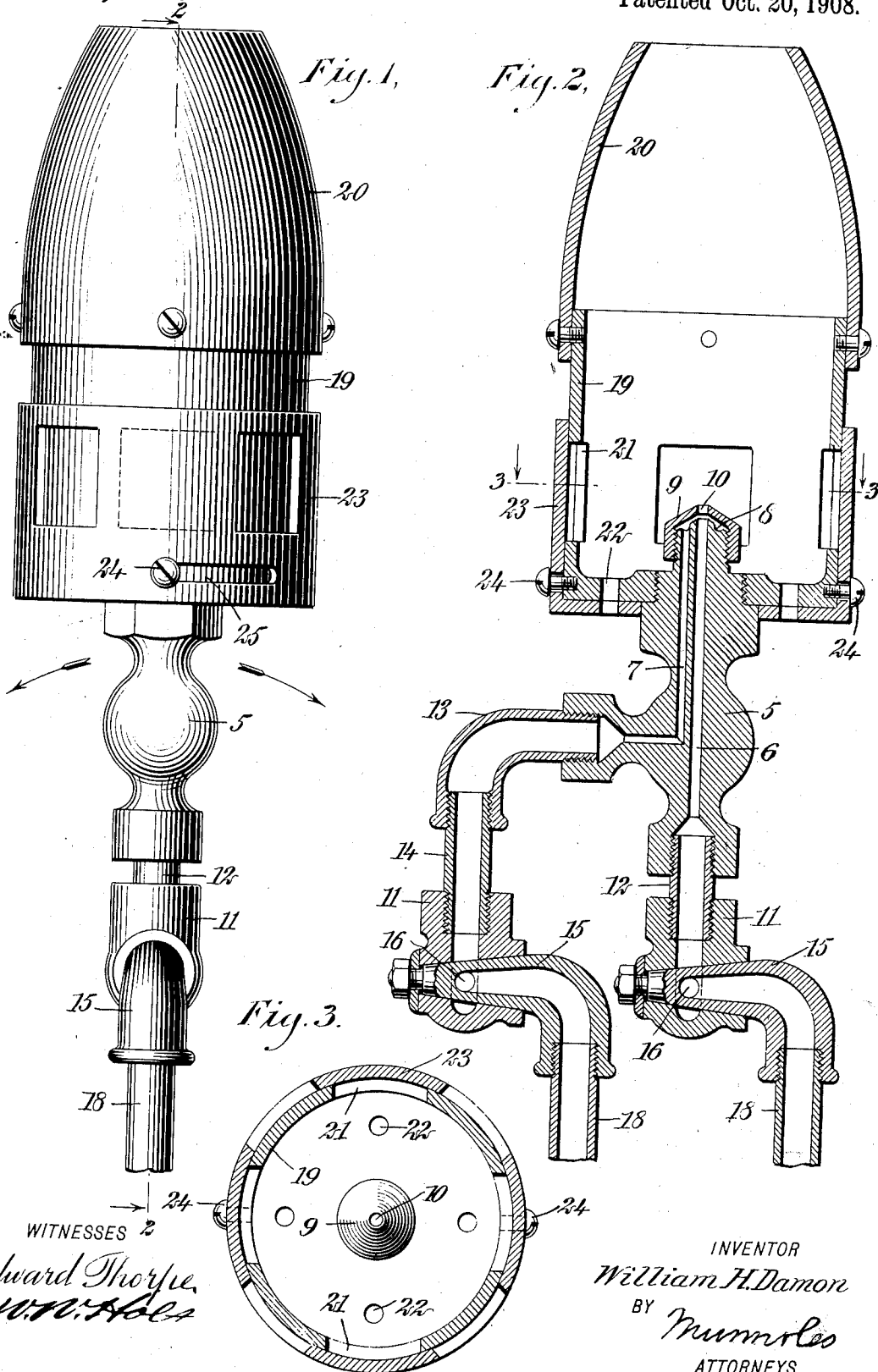


W. H. DAMON.
BURNER.

APPLICATION FILED NOV. 16, 1907.

901,788.

Patented Oct. 20, 1908.



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UNITED STATES PATENT OFFICE.

WILLIAM H. DAMON, OF NEW YORK, N. Y.

BURNER.

No. 901,788.

Specification of Letters Patent.

Patented Oct. 20, 1908.

Application filed November 16, 1907. Serial No. 402,437.

To all whom it may concern:

Be it known that I, WILLIAM H. DAMON, a citizen of the United States, and a resident of the city of New York, Morris Park, borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Burner, of which the following is a full, clear, and exact description.

This invention is an improvement in hydrocarbon burners as used for heating purposes, such, for example, as heating rivets for boilers, fire-boxes, etc., and has for an object to provide a burner having air and fuel passages, a combustion flue surrounding the burner having air intake openings in the side and bottom thereof, and a regulating device closely fitting the flue having like openings in the side and bottom thereof, the side openings and the bottom openings of the flue and regulating device being movable alternately into and out of register when the device is revolved relatively to the flue.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of a burner embodying my invention; Fig. 2 is a central vertical section of the same substantially on the line 2—2 of Fig. 1; and Fig. 3 is a cross-section on the line 3—3 of Fig. 2 looking in the direction of the arrows.

The burner body 5 is constructed with a substantially central longitudinal air-passage 6, and a fuel passage 7, located at one side thereof, said fuel-passage discharging at the head of the burner in an annular groove 8 formed therein. Adjustable over the head of the burner, preferably threadedly connecting therewith, is a cap 9 of conical form to conform to the top of the burner-head, and having a central discharge opening 10 in substantial alinement with the air passage 6.

The air passage 6 connects with a socket member 11 through the intermediary of a nipple 12, and the fuel-passage 7 is connected with a like socket member 11 by an elbow 13 and a nipple 14, the elbow connecting at one side of the burner body, whereby the fuel-passage is off-set at one side of the air-passage. The socket members 11 are in substantial transverse alinement, and each is revoluble upon a conical elbow 15 having an

aperture 16 at its inner reduced end, which is at all times in communication with the adjacent passages. The elbows 15 respectively connect with air pressure and fuel supplies as by the pipes 18.

Inclosing the head of the burner and threaded to the body thereof is a combustion flue 19, having a detachable conical nozzle 20, and provided with two sets of openings 21 and 22, respectively arranged in its side and in its bottom. The side openings and bottom openings in the combustion flue are for the purpose of admitting the requisite quantity of air for complete combustion, and are adapted to be alternately covered by a cup-shaped regulating device 23 revolubly mounted on the body of the burner, and provided with openings in the sides and bottom thereof, having the same relative arrangement as the openings in the flue. When the openings through the bottom of the flue are insufficient to supply the desired quantity of air to the burner, the regulating device is revolved to bring its side openings into register and simultaneously operates to cut off or blank the openings in the bottom. This movement of the regulating device is preferably limited in each direction by screws 24, said screws also serving to support the said device on the combustion flue. The screws 24, as best shown in Fig. 1, are threaded into the base of the flue and pass through slots 25 formed in the regulator. The relative location of the screws 24 and the slots 25 is such that as the regulator is revolved its limit in one direction, the side air intake openings are cut off and the bottom air intake openings are uncovered, as shown in Fig. 2, and when revolved its limit in the opposite direction, the reverse is the case.

In the operation of the burner, the fuel passes to the burner-head and flows in the annular groove 8 where it is completely vaporized and is forced by the air, passing through the passage 6, through the discharge opening 10, where it is thoroughly mixed and ignited, the flame being concentrated by passing through the conical nozzle 20.

The burner in use may be swung to and from the points of application on the elbows 15, which adapt it for use in places ordinarily inaccessible to devices of like character.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

In a hydrocarbon burner, a burner body having air and fuel passages, a combustion flue surrounding said body, having air intake openings in the side and bottom thereof, and a regulating device closely fitting said flue, having like openings in the side and bottom thereof, the side openings and the bottom openings of the flue and regulating device movable alternately into and out of register

when the device is revolved relatively to the 10 flue.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. DAMON.

Witnesses:

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