(No Model.)

W. M. JENNINGS.

INJECTOR OIL BURNER.

No. 422,222. Patented Feb. 25, 1890.

Fig. 1.

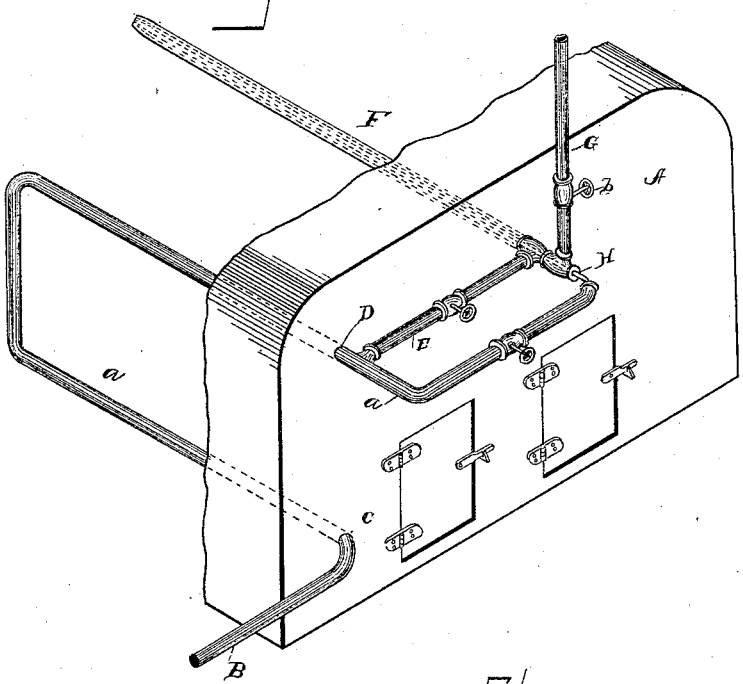


Fig. 2.

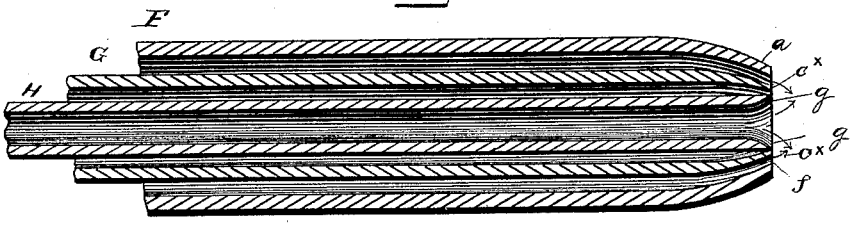
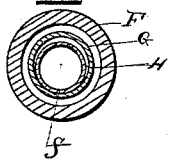


Fig. 3.



Witnesses
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E. E. O'Connell

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By his Attorney
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UNITED STATES PATENT OFFICE.

WELLINGTON MARCELLUS JENNINGS, OF BUFFALO, NEW YORK.

INJECTOR OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 422,222, dated February 25, 1890.

Application filed August 20, 1889. Serial No. 321,401. (No model.)

To all whom it may concern:

Be it known that I, WELLINGTON MARCELLUS JENNINGS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Injector Oil-Burners; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in oil-burners, and pertains more particularly to that class wherein coal-oil or other liquid hydrocarbon is used as a fuel in steam-boilers or other furnaces.

The object of my invention is to provide a burner which will spray the oil and mingle with the same superheated steam, so as to effect a complete combustion of the gases formed by the union of the oil and steam.

In the drawings, Figure 1 is a view in perspective of a portion of a furnace with my improved burner located therein. Fig. 2 is a longitudinal sectional view of the pipes forming the burner; Fig. 3 is an end view of the devices shown in Fig. 2.

A indicates the front portion of the furnace, which may be of any suitable or desirable construction.

B is a steam-pipe leading from a steam-boiler or other suitable source of supply, said pipe entering the furnace at C. The object of passing the pipe B through the furnace is to superheat the steam and get it thoroughly dry before coming in contact with the oil.

E is a pipe leading from the pipe B across the front of the furnace and connecting with the pipe F, said pipe F being contracted at its end to form a nozzle, as shown at Figs. 1 and 2.

G is an oil-supply pipe provided with a suitable cock *b*, by which the supply of oil is regulated, and being somewhat smaller than the pipe F it passes thereinto. This pipe G is also contracted at its end, as shown at $c^{\times}$, Fig. 2, so as to form a nozzle.

The end of the pipe B connects with a smaller pipe H, which is passed into the oil-supply pipe G, the pipe H being made adjustable in a longitudinal direction in any suitable manner to vary the size of the opening where the oil is discharged. This gives another means of regulating the oil-supply and also enables the operator to free the nozzle of any clot of oil which might have collected at the end of the oil-pipe.

The end of the steam-pipe H is made flaring, as shown at *g*, so as to spread the steam-jet as it emerges therefrom.

It will be noticed that the inner steam-pipe H and the oil-supply pipe G are so arranged at the end that they touch at the lower side, as indicated at *f*, Figs. 2 and 3. This prevents any dripping of the oil.

The steam from the inner pipe H spreads out and the steam from the outer pipe strikes inward toward the oil, as indicated by the arrows, so that the two jets of steam make a conical flame.

What I claim, and desire to secure by Letters Patent, is—

1. In a device for burning coal-oil or other liquid hydrocarbon, an outer steam-pipe, an intermediate oil-pipe, and an inner steam-pipe within said oil-pipe, the outer steam-pipe and the oil-pipe having inward tapered or bent discharge ends, and the inner steam-pipe having a flared discharge end, the discharge end of the inner steam-pipe resting at its lower edge upon the inside of the oil-pipe, closing the lower portion of the oil-pipe, said discharge ends of the pipes converging and standing in the same vertical plane, substantially as specified.

2. In a device for burning coal-oil or other liquid hydrocarbon, an oil-supply pipe having a steam-supply pipe located therein, the steam-supply pipe being arranged to rest at its lower front end on the inside of the oil-pipe, whereby the lower portion of the oil-pipe is closed and a dripping of the oil is prevented.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

WELLINGTON MARCELLUS JENNINGS.

Witnesses:

M. B. SPENCER,

JOHN FALLABEE.