(No Model.)

L. B. WHITE.

OIL BURNER.

No. 468,589. Patented Feb. 9, 1892.

Fig. 1.

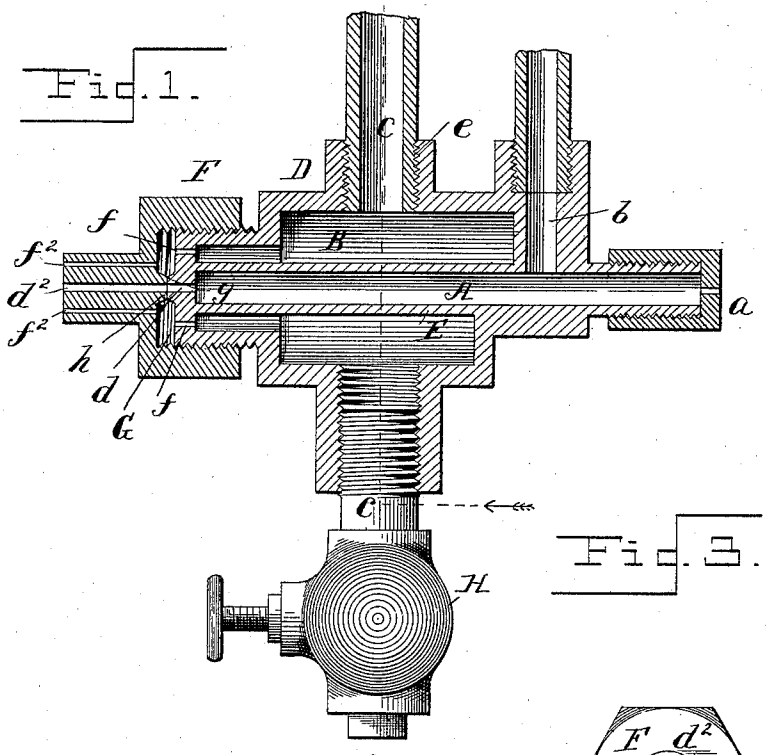


Fig. 3.

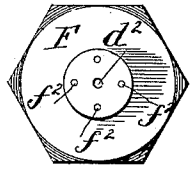


Fig. 2.

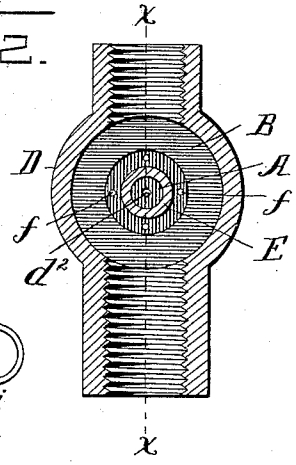
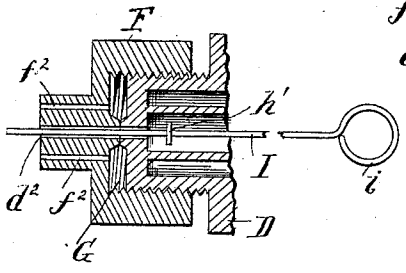


Fig. 4.



Witnesses

W. F. Courtland

Louis Freedman

Inventor

Lewis B. White

by T. F. Bourne

his attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LEWIS B. WHITE, OF NEW YORK, N. Y., ASSIGNOR TO LEON ABBETT, OF JERSEY CITY, NEW JERSEY.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 468,589, dated February 9, 1892.

Application filed August 10, 1891. Serial No. 402,238. (No model.)

To all whom it may concern:

Be it known that I, LEWIS B. WHITE, a resident of New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Oil-Burners, of which the following is a specification.

The object of my invention is to provide improved means for atomizing hydrocarbon oil or reducing it to the form of spray, whereby it can be burned in a manner similar to gas.

Another object is to keep the oil-passage in the burner clean and free from accumulations.

The invention consists in the novel details of improvement and the combination of parts that will be more fully hereinafter set forth, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a longitudinal sectional view of my burner, taken on the plane of the line *x x*, Fig. 2. Fig. 2 is a vertical cross-section of the same on the plane of the line *c c*, Fig. 1, looking in the direction of the arrow. Fig. 3 is an end view showing the apertures for the oil and air by which the oil is atomized, and Fig. 4 is a detail sectional view showing the cleaning-rod in position.

My burner has two compartments A B for the passage of the oil and air, respectively, which are isolated from each other.

The burner is preferably cast in a single piece of metal, and consists primarily of an outer casing or shell D and an inner tube-like shell E, forming together the compartments A B.

In forming the burner the shell D and bar E are cast in one piece with solid ends, with an internal core in the mold around the part or bar E, (which is cast solid,) whereby the compartment B is formed between D and E, and then the part E is drilled or bored out, as shown, to form the compartment A. By this method the burner is made without seam or joint. A suitable cap *a* is then secured over the outer end of the tube-like shell or part E to close the compartment A. The compartment A also leads by a channel *b* to the outer side of the burner-casing, whereby it is connected to a suitable oil-reservoir or other oil-supply source from which oil is supplied to the burner under pressure. The opposite or forward end of the compartment A leads by a channel *d* to the exterior of the burner, whereby the oil is delivered from the burner in the desired amount. The compartment B is connected by a channel *e* with a suitable air-supply source, whereby air under pressure may be forced into the compartment B. From the compartment B the air issues through apertures *f*, which surround the channel *d*. Over the channels or apertures *d* and *f* is a cap F, which has a channel d^2, aligned with the channel *d* for the exit of the oil, and also apertures f^2, corresponding to the apertures *f* for the air to issue from. Between the cap F and the end of the burner proper is a chamber G to receive air to distribute it to the apertures f^2. This chamber is formed by means of lugs *g* and *h* on the burner and cap F, respectively, as in Fig. 1, which when the cap is screwed on will engage and thus hold the cap from the end of the burner, as shown.

H is a suitable blow-off cock connected with the air-compartment B.

In order to convey the oil from the channels *d* and d^2, to be caught by the issuing air and also to keep the oil-passages clean and free from accumulation, I place a rod I in the compartment A, one end of which projects through the channels *d* and d^2 and extends outward therefrom a suitable distance—say one-half inch—which rod has a shoulder *h'* to regulate its movement by striking the inner wall of the compartment A. (See Fig. 4.) The end of the rod I is sufficiently small to permit the oil to pass around it through the channels *d* and d^2, and the oil also travels along the rod I and drops from its outer end. The opposite end of the rod I, which projects through the cap *a*, preferably carries a ring, knob, or the like *i*, by which it is manipulated. If accumulations occur in the channels *d* or d^2, it is merely necessary to push the rod I back and forth, when it will clear the channels.

In use the oil is fed to the burner under suitable pressure and issues from the channels *d* and d^2 and travels along the rod I, while at the same time air is forced into the compartment B, from whence it passes through the channels or apertures *f* and f^2, and as it

meets the oil dropping from the channels d and d^2 and from the end of the rod I it atomizes said oil, reducing it to spray, which, when ignited, burns in a manner similar to gas with an intensely-hot flame.

The burner is simple in construction, not liable to get out of order, and by being made in one piece of metal is strong and durable.

Having now described my invention, what I claim is—

1. An oil-burner having an oil-compartment and an air-compartment surrounding it and having a wall at its end, an outlet for the oil-compartment, and apertures in the wall of the air-compartment surrounding said oil-outlet, and inlets to said oil and air compartments, substantially as described.

2. An oil-burner composed of an outer shell or casing having a wall at its end, an inner shell or casing forming between them the compartment B, the inner shell or casing also inclosing a compartment A, an outlet for the compartment A, and apertures in the wall of the compartment B surrounding the first-mentioned outlet, and inlets for said compartments, substantially as described.

3. In an oil-burner, the combination of two casings forming two compartments, each compartment having an inlet and an outlet, with a cap over said outlets and connected to the burner, and a compartment G between said burner and the inner side of said cap, and outlets in said cap, the outlets in the compartment B surrounding the outlet in compartment A, said cap also having outlets corresponding to the outlets in compartment B, substantially as described.

4. In an oil-burner, the combination of two casings forming two compartments, outlets for said compartments, and a lug at the end of one of said compartments, with a cap to fit over said outlets, outlets in said cap to correspond to the outlets in the burner, and a lug on the inner side of said cap to encounter the first-mentioned lug, whereby a compartment is formed between the burner and the cap, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 8th day of August, 1891.

LEWIS B. WHITE.

Witnesses:
T. F. BOURNE,
DANIEL JACKSON.