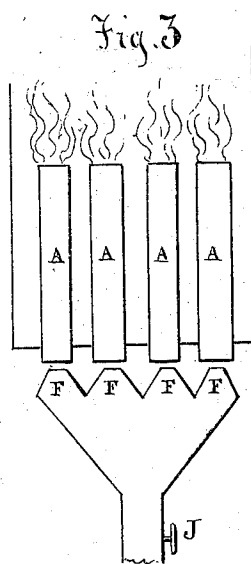
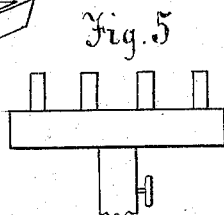
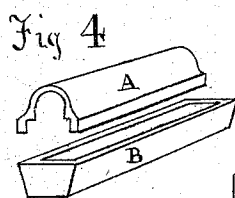
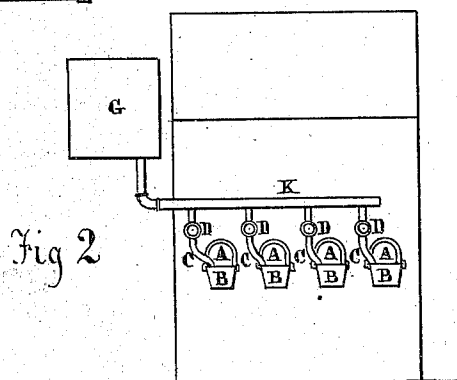
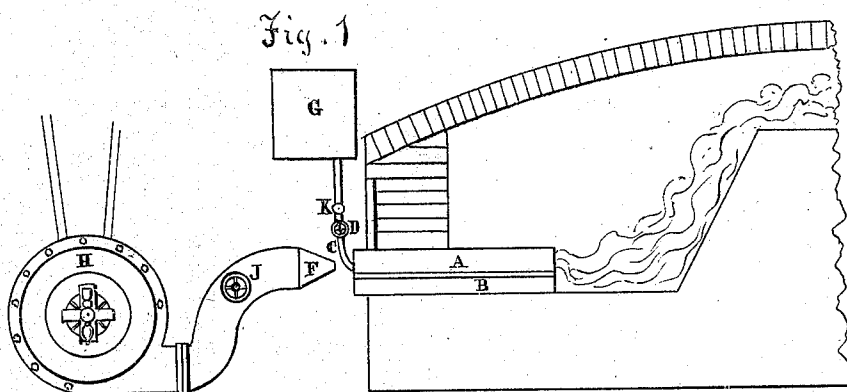


W. C. WREN.
Improvement in Apparatus for Burning Liquid-Fuel
to Heat Furnaces.

No. 131,804.

Patented Oct. 1, 1872.



Witnesses:

James B. Leardie
George Wren

Inventor

William C Wren

UNITED STATES PATENT OFFICE.

WILLIAM C. WREN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN APPARATUS FOR BURNING LIQUID FUEL TO HEAT FURNACES.

Specification forming part of Letters Patent No. 131,804, dated October 1, 1872.

To all whom it may concern:

Be it known that I, WILLIAM C. WREN, of Brooklyn, in the State of New York, have invented certain Improvements in Using Liquid Fuel in Combination with a Forced Blast, of which the following is a specification:

The nature of my invention consists in using liquid fuel in combination with a forced blast—liquid hydrocarbon to be used in the place of coal for smelting or other furnaces; also, the method and means of applying the same.

Figure 1 is a sectional view of a furnace broken off at the bridge-wall, with my attachments in place; Fig. 2, front elevation of same; Fig. 3, top sectional view of same; Fig. 4, perspective view of muffle, separated.

A B, Fig. 4, is what I call a muffle, consisting of a long, shallow pan, B, with an arch-cover, A, open at both ends. G is a tank, holding the supply of liquid fuel, having the main pipe K and the branch pipes C C C C, to lead from the tank and into the pan or muffle B, with the stop-cocks D D D D in each pipe C to regulate the flow of material into the pan or muffle B. F is a blast-pipe, supplied by blower H, at Fig. 1, with openings or outlets of a number to correspond with the number of pans and muffles used, as shown at Fig. 3, or the blow-pipe may be made of the shape shown at Fig. 5.

Having described the separate parts, I will show the application: I place the muffle and pan A B (or several of them, according to the width of the furnace) on the grate-bars, with one end projecting beyond and through the door, as shown at Figs. 1, 2, 3. I then have a tank, G, at some convenient place, with the pipe K leading from it with as many branches C, controlled by stop-cocks D, as there are pans and muffles A B, each of the branches C just entering the pans B, as shown at Fig. 2,

to supply the pans B with the fuel. I then have a pipe or pipes, F, connected with a blower, H, the supply of wind to be controlled by the stop-cock or valve J. Each outlet of the wind-pipe F must be exactly opposite and on a line with the top edge of the pan B, that projects outside of the furnace, so that the wind from the blower will blow right through the muffle A into the furnace.

Having arranged the parts in the manner described, I fill the tank G with the liquid fuel to be used, and run it, by the pipes K and C, into the pan B, light it, and put on the blast by the pipe or pipes F, and drive the flame and heat into the furnace.

What I claim as my invention is—

1. The combination of the pan B with the blast-pipe, in the manner and for the purpose described.
2. The combination of the blast with the tank G, pipe C, and pan B, as described.
3. The combination of the pans B and muffles A with a number of branch fuel-pipes, C, and wind-pipes F, the pipes C C C C arranged to be used separately or together, in the manner described.
4. The construction of the muffle and pan A B in the manner described, for the purpose set forth.
5. The combination of the pipe K, leading from the tank G, with two or more branches, C C, each branch C fitted with a cock, D, to be used separately alternately, or together, in the manner and for the purpose set forth.
6. The combination of one blow-pipe or more with one pipe, C, or more; one or more muffles and pans, A B, with a furnace, as described.

WILLIAM C. WREN.

Witnesses:

JAMES C. CARDIE,
GEO. WREN.