

F. DIECKMANN.

GAS FURNACE.

No. 256,132.

Patented Apr. 11, 1882.

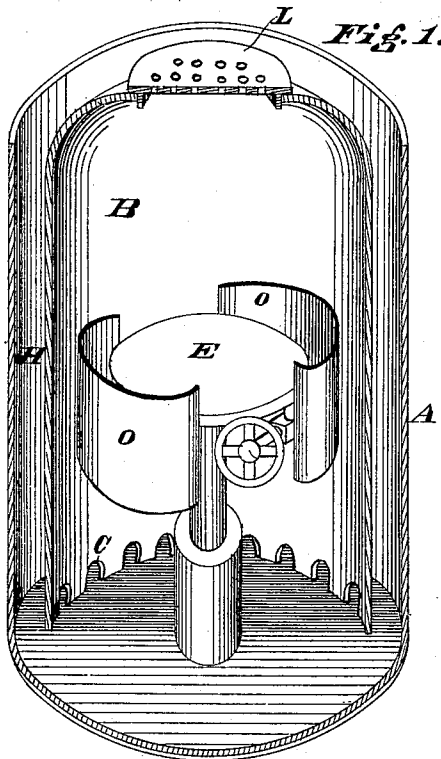


Fig. 1.

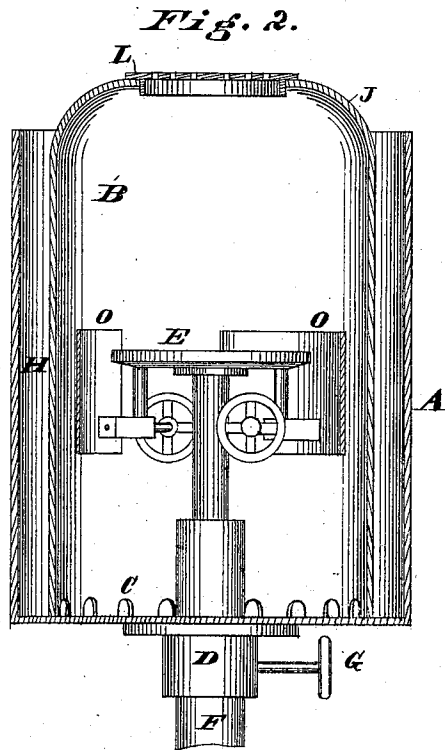


Fig. 2.

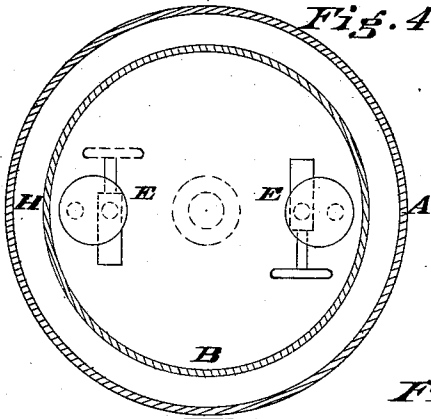


Fig. 4.

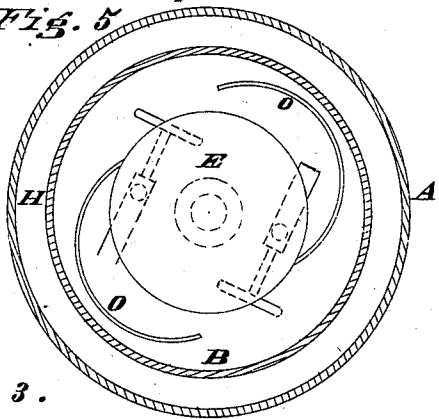


Fig. 5.

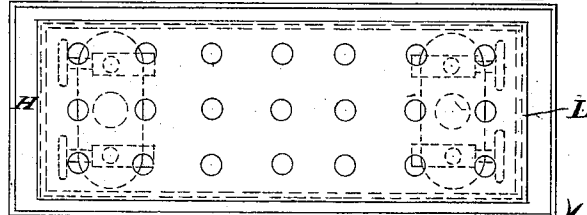


Fig. 3.

Attest

Edwin Ladd
Edwin Ladd

Inventor

Ferdinand Dieckmann

(No Model.)

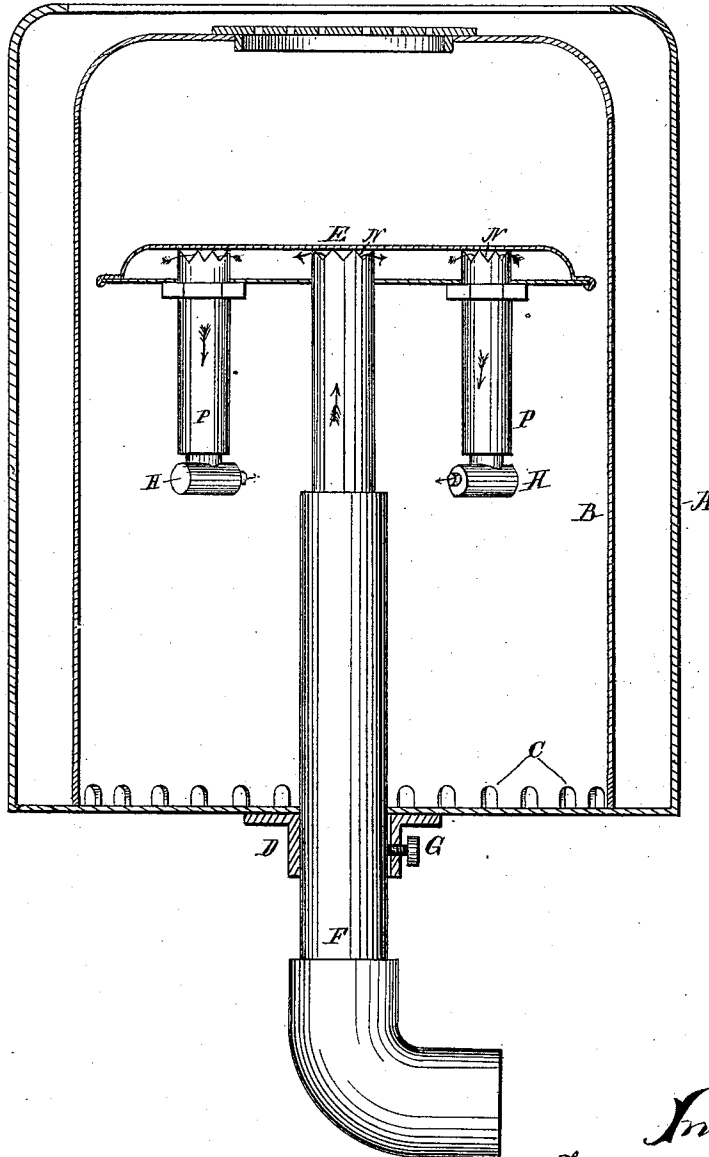
2 Sheets—Sheet 2.

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Fig. 6.



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UNITED STATES PATENT OFFICE.

FERDINAND DIECKMANN, OF CINCINNATI, OHIO.

GAS-FURNACE.

SPECIFICATION forming part of Letters Patent No. 256,132, dated April 11, 1882.

Application filed October 11, 1881. (No model.)

To all whom it may concern:

Beit known that I, FERDINAND DIECKMANN, of Cincinnati, county of Hamilton, and State of Ohio, have invented new and useful Improvements in Gas-Furnaces, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to produce a gas-furnace in which are used a hydrocarbon burner or burners for producing the gas used in the furnace.

Figure 1 shows a perspective view of my invention with a portion of one side cut away; Fig. 2, a sectional view through the center. Figs. 3 and 4 show its construction when two or more burners are used. Fig. 5 will be explained farther on. Fig. 6 shows a sectional view, on an enlarged scale, of my device, the burner being represented partly in section.

A represents a round cup, made of sheet metal or any suitable material, and of any desired height or diameter. This cup is open at the top, but perfectly tight at the bottom. To the bottom of this cup is securely fastened a sliding socket, D, provided with a set-screw, G. This socket is made to slide over the pipe F, and is held in position by the set-screw G. This is for the purpose of adjusting the cup A in relation to the burner E, or to drop it entirely below the burner if the latter needs cleaning. Inside of the cup A is a smaller cup, B, of about the same height as A, but sufficiently smaller to leave an air-space, H, between the two cups. In the lower edge of the cup B are numerous holes or indentations, as shown at C, for the purpose of letting the air from the opening H flow freely under and around the burner E. The top of this cup is curved inwardly, as shown at L, for the purpose of consolidating the flame as it leaves the furnace. The object of the double cup is to supply the burner in the small round furnace with heated air and intimately mix the same with the gas during combustion.

Above the cup B, and separated from it about one inch, more or less, is placed the perforated cover shown in Figs. 1, 2, and 3. This cover may be fastened in position by any suitable means. The object of this cover is to check the upward rush of the flame, so as to more thoroughly mix and burn the gas, thereby producing a clean and powerful fire and greatly increasing the heating-power of the furnace. When a single burner is used in a round furnace two adjustable curved plates, O O, (shown

in section in Fig. 5,) are so placed that a part of the flame is constantly thrown against the burner to keep it at the proper degree of heat for generating the gas. When two or more burners are used in the round furnace they are so arranged that the flames follow the curve of the cup B, and so impinge on each other, as shown in Fig. 4. These cups A and B may be made in the shape of a long box when a very large fire is wanted for raising steam or like purposes, and two or more burners placed in each end of the box, as shown in Fig. 3, the fire from one set passing over to and entirely enveloping those in the other end. In this form of the furnace the inner cup, B, may be omitted, if desired, as the great space between the burners gives sufficient heated air to produce perfect combustion. By the position of the burners in the furnace they are kept sufficiently hot to produce gas from the heaviest hydrocarbon oils by their own flame, and yet are not subject to so high a heat as to destroy them.

The great advantages of this furnace over those now in use are its cheapness of construction, simplicity, power, and perfect adaptability to all the uses of a gas-furnace where a clean and powerful fire is wanted.

The operation of my furnace is as follows: The oil flames up through the pipe F, through the notches N, into the body of the burner E, where it is instantly converted into gas, and following the course of the arrows the gas passes into the top of the short pipes P, and down and out at the needle-valves H. From the points of these valves the flames make a complete circle around the inside of the cup B, and then issue in a solid body out at the top of the furnace.

I claim—

1. In a gas-furnace, the tight-bottomed box A, in combination with the sliding socket D, set-screw G, and perforated cover L, as and for the purpose set forth.

2. The gas-furnace described, consisting of the tight-bottomed box A, inner box, B, air-space H, air holes or indentations C, sliding socket D, set-screw G, perforated cover L, curved plates O O, and gas-burner E, substantially as and for the purpose described.

FERDINAND DIECKMANN.

Attest:

J. H. NOLL,
JOE WILLINGER.