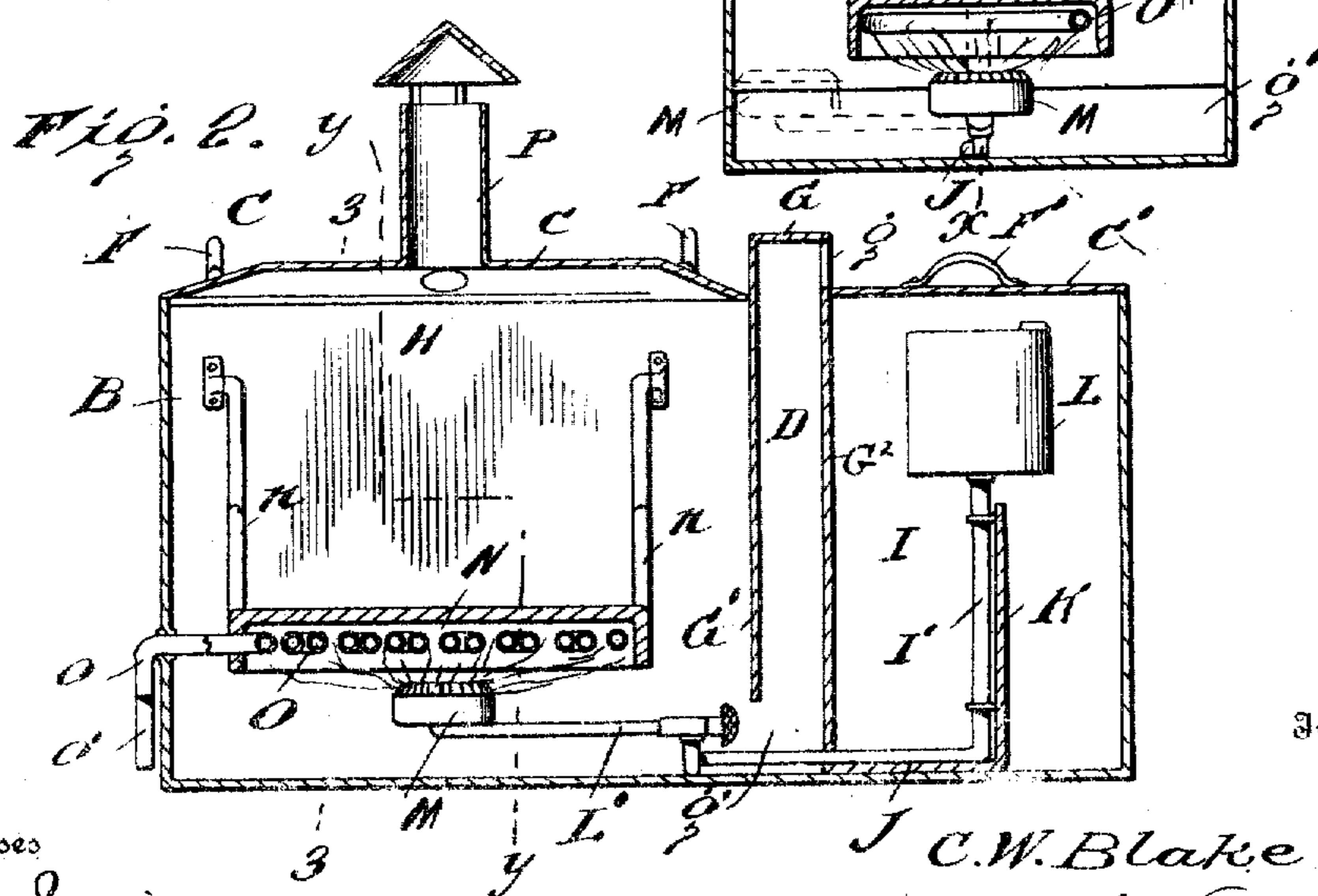
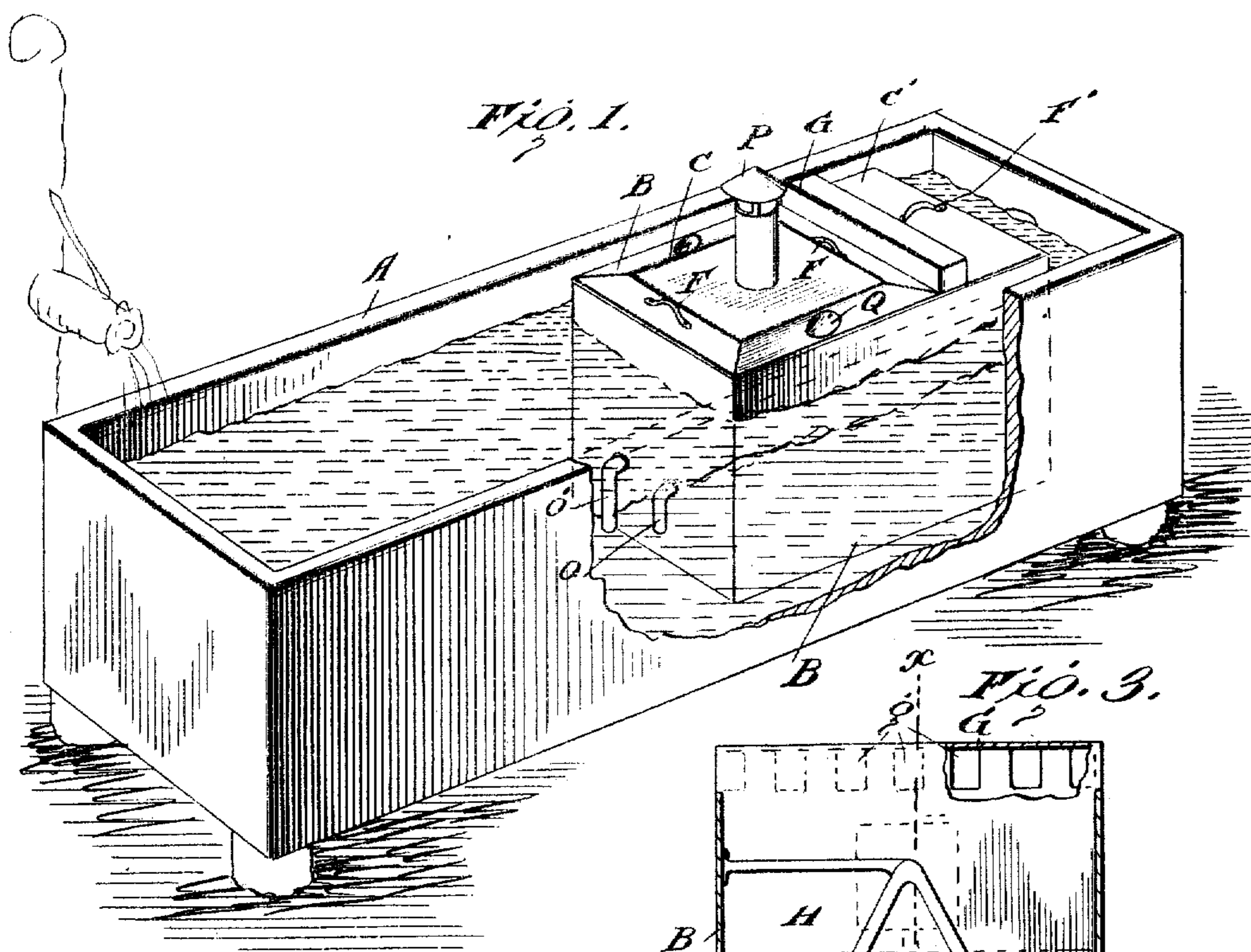


No. 842,168.

PATENTED JAN. 29, 1907.

C. W. BLAKE.
TANK HEATER.

APPLICATION FILED JULY 3, 1906.



Inventor

Witnesses

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CHARLES W. BLAKE, OF WESLEY, IOWA.

TANK-HEATER.

No. 842,168.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed July 3, 1906. Serial No. 268,100.

To all whom it may concern:

Be it known that I, CHARLES W. BLAKE, a citizen of the United States, residing at Wesley, in the county of Kossuth and State of Iowa, have invented certain new and useful Improvements in Tank-Heaters, of which the following is a specification:

My invention relates to improvements in tank-heaters, and pertains particularly to that class known as "portable" heaters.

The object of my invention is to provide a heater of this character which is placed within the stock-watering tank and is adapted to equally heat the water within the tank whether the same is full or whether there is but a small amount of water in the tank.

Another object of my invention is to provide a heater of this character in which there is less liability of the gasolene-tank becoming heated and exploding and also to more thoroughly heat and cause the circulation of the water within the tank.

In the accompanying drawings, Figure 1 is a perspective view of the tank, partly broken away and my improved heater placed therein. Fig. 2 is a longitudinal vertical section of my improved heater, taken on line *x x* of Fig. 3. Fig. 3 is a transverse vertical sectional view taken on line *y y* of Fig. 2.

Referring now to the drawings, A represents the tank, the ordinary structure to which I desire to apply my improved heater, although the same may be applied to any form of tank.

B represents my improved heater, which, as shown, is in the form of an oblong box-like member and is preferably made of sheet metal and perfectly water-tight, so that it may rest within the tank of water. The upper end of said heater is open, as shown, and is covered with two covers C C', leaving an open space D between the same. These covers are provided with handles F F', by means of which they may be readily removed. The cover C, as shown, is considerably larger than the cover C', thus covering the greater portion of my improved heater or that portion in which the burner is located. The cover C' covers that portion of the heater in which the gasolene-tank is located.

The space D between the covers C C' extends, as clearly shown, transverse of the heater and through which the air is fed to the burner. Fitting within this space is a slide-draft G, which projects a slight distance above the upper end of the heater and is pro-

vided with open side *g*, through which the air passes. The said slide-draft is of a box-like form and extends down within the heater and rests upon the bottom thereof, thus dividing the heater into the burner-chamber H and the tank-chamber I. The side G' at its lower end is cut away at *g'* and thus allowing the air to pass from the slide-draft into the burner-compartment H adjacent and below the burner. This slide-draft, as shown, dividing the heater into two distinct compartments, with a wall of cold air at all times passing between the two compartments, prevents the compartment I from becoming at all heated.

The side G' of the slide-draft G is provided with a rearwardly-extending portion J, which is adapted to support the vertically-disposed partition K intermediate the ends of the compartment I. This partition supports the oil-tank L at a point about the center of the compartment I, and thus the oil therein is prevented from becoming heated at any time. The said tank L is provided with a downwardly and forwardly extending pipe L', which passes through the slide-draft G and ends at a point about midway of the compartment H. Pivotaly carried by the outer end of the pipe L' is a burner M, which is of the ordinary type, and the pivotal connection of the burner with the pipe allows the burner to be swung around, the purpose of which will be hereinafter described.

Within the compartment H, above the burner M, is supported a heat-containing hood N, which is of a rectangular inverted box-like form. The said hood is supported by the brackets *n*, which extend upwardly and outwardly and are secured to the side of the heater B. This diaphragm is adapted to concentrate and hold the heat therein, thus heating the coil O. The said coil O is made of three-quarter inch tubing and of a V-shaped form, with the coils about one-quarter of an inch apart, the ends of said coil extending through the diaphragm and passing out through the end of the heater. These ends *o o'* are turned downwardly and extend within an inch or two of the bottom of the heater and at the outside thereof. By this arrangement of the coil and the downwardly-extending ends thereof it will be readily seen that a thorough circulation of the water is caused within the tank, no matter how much water may be therein. The coil may be arranged within the hood on a slight inclina-

tion, so that should the water within the tank be consumed and the fire extinguished the water will drain from the coil and prevent the freezing up of the coil. The burner, as
5 heretofore described, is pivotally connected to the pipe L', and thus allows the same to be swung around from under the coil for the purpose of cleaning and repairing.

The cover C of the compartment H is provided with a ventilator P, which allows of the
10 escape of the products of combustion, preventing the heating of the casing B, as the heating of the water within the tank is not relied thereon by the same, but is accomplished by the circulation of the water
15 through the coil. The cover C is also provided with openings Q, which are covered with glass, whereby the burner can be readily seen without removing the cover.

20 Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A tank-heater comprising a receptacle, a draft arrangement of a box-like form dividing the receptacle into two distinct compartments, a tank within one of said compartments, a pipe leading from the tank through the draft arrangement and into the other

compartment, a burner pivotally mounted upon said pipe, a hood above said pipe, a coil
30 beneath the hood and having its ends extending out through one side of the compartment, the end of said pipe turned downwardly, a removable cover above the compartment carrying the burner and provided
35 with a ventilator, and a removable cover for the compartment carrying the tank.

2. A tank-heater comprising a receptacle, an oil-tank within one end, a burner within the opposite end and in communication with
40 the oil-tank, a draft arrangement of a width equal to that of the heater intermediate the oil-tank and burner and completely dividing the receptacle into two distinct compartments, a hood above the burner, a coiled pipe
45 within the hood and extending out through one side of the receptacle, and the ends of the said pipe on the outside of the receptacle turned downwardly nearly to the bottom of the receptacle.
50

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

CHARLES W. BLAKE.

Witnesses:

MAME BUTTS,
GUY M. BUTTS.